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Components of and creative planning for optimal health care for mothers and children are considered as well as changing patterns of health care. Applying what is known about the consumer and educating the consumer are discussed; also discussed are the role of the consumer in planning health care services, communication between doctor and patient, and the consumer as a partner in the health care team. Aspects of the health manpower described are the dimensions of the problem, possible redistribution of manpower and services, and functions of members of the health care team, including medical and non-medical professionals, other personnel, and interdisciplinary collaboration. Problems of designing effective training are treated; medical and behavioral science training for physicians and nurses, training in health care for social workers, and training and licensing other members of the team are considered; and making training relevant is discussed in terms of relating it to current medical and behavioral research findings, the health care system, and the realities of practice. Guidelines for future action and a list of conference participants are provided. (JD)

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OPTIMAL HEALTH CARE FOR MOTHERS AND CHILDREN: a national priority

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OPTIMAL HEALTH CARE FOR MOTHERS AND CHILDREN:
A NATIONAL PRIORITY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A Report of Five Conferences
held during 1967
by

THE NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT
NATIONAL INSTITUTES OF HEALTH
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Cover: Adapted from a photograph of the sculpture "The Family" by Charles Keck, which appeared in the book A Baby is Born. Courtesy of the Maternal Center Association, 48 East 92nd St., New York, N. Y. 10028.

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FOREWORD

Within the past decade or two there have been tremendous advances in medical and developmental knowledge. Yet in spite of this, it has become increasingly apparent that the health needs of children and their families in the United States are not being met adequately. Babies are still being born prematurely and with handicapping conditions; mothers are still suffering the effects of needlessly difficult pregnancies and childbirths; children are growing up physically and intellectually under par, to produce new generations of babies who start life with several strikes against them. In our affluent society, incredible numbers of families go through their entire lives without the medical care they desperately need.

Where does the problem lie? In translating the fruits of research into appropriate services? In the training of those who provide the services? In the education of the families who need the services?

These questions have no simple answers, but it is imperative that answers be sought. As a starting point, the Offices of the Secretary of the Department of Health, Education, and Welfare and the Surgeon General of the Public Health Service asked the National Institute of Child Health and Human Development to undertake a series of conferences designed to look at optimal health care needs and what specific contributions each of many disciplines can be expected to make. Five conferences were held between January and December of 1967 under the leadership of Dr. Dwain N. Walcher, NICHD's Associate Director for Planning and Evaluation. Participants included obstetricians and gynecologists, pediatricians, nurses, psychiatrists, psychologists, sociologists and other behavioral scientists, and social workers. All of the conferences were interdisciplinary, with particular emphasis being given to one or two disciplines in the selection of participants for each meeting. To assure continuity, some overlapping of participation from one meeting to the next was provided.

Although the meetings were informal, with the emphasis on spontaneous discussion, certain significant issues emerged again and again, and some program development priorities were suggested. This material has been summarized in a single volume in the hope that it will provide a useful base for additional discussion, concrete proposals, and vigorous action at national, state and local levels. It is directed to all who are concerned with assuring the optimal physical and psychosocial functioning of children and their families, whether they approach this task within the context of research, services or the training of professional personnel.

We are deeply grateful to the many individuals who gave so freely of their time and thinking to assist in this analysis of optimal health care needs. For some who were asked to serve as special consultants, many months of work and many meetings in addition to the five conferences were involved, and they developed numerous background papers as a base for conference discussion. Among those who served in such capacities were the late Dr. Harry McGaughey, Jr., Dr. Harry Prystowsky, and Dr. Charles D. Cook. Representatives of the Office of the Secretary of HEW, the Office of the Surgeon General, the Children's Bureau, and the Bureau of Health Manpower were present at all the meetings, and many members of the NICHD staff were heavily involved. We would like especially to thank free lance science writer Mrs. Leora Wood Wells for the preparation of this summary report of the five conferences.

We have been particularly gratified to hear from participants in some of the conferences that steps are already being taken in their own states to implement some of the suggestions developed in this series of meetings. This speaks well of the vigor of the interdisciplinary groups and the dedication of the individual participants.

Gerald D. LaVeck, M.D.
Director
National Institute of Child Health
and Human Development

OPTIMAL HEALTH CARE: THE BASIC ISSUES

Optimal health, as the term was used throughout the five multidisciplinary conferences assembled by the National Institute of Child Health and Human Development at the request of the Secretary of Health, Education, and Welfare, and the Surgeon General, means more than just freedom from disease. Following the concepts expressed by the World Health Organization, health was interpreted to mean a state of optimal physical and psychosocial functioning. The provision of optimal health care involves the whole child and the whole family within the social milieu which affects them so deeply and directly.

Health care no longer centers primarily around how many infants survive and how many people can be brought back from sickness to a survival level of health. It has moved beyond this limited approach into the prevention of illness and handicapping and the building of health in the most positive and far-reaching sense. In other words, the focus of health care services has moved from concern with the quantity of life to assumption of responsibility to protect and promote the quality of life.

In little more than a decade from now, it is estimated, there will be 76 million children in the United States. This means an enormous increase in the need for health services, but the ratio of physicians to population is decreasing. The fact that so many physicians now specialize in fields which do not include care of children creates a still further imbalance in the ratio between physicians and child patients.

Access to appropriate health care as a right of every citizen has been clearly enunciated as national policy through Federal legislation enacted during the past few years, and our goal is one class of high quality care for everyone. Through recent legislation to provide funds for comprehensive health planning, training and research, through coordination of already existing programs and resources, and through development of new types of health manpower it should be possible to overcome the current fragmentation and impersonalization of health care which is so often the lot of the poor.

Establishment of a small number of carefully planned pilot "centers" reexamining the functions of the health care team and testing innovative approaches should do much toward reaching the goal. Such programs would utilize neighborhood, community, public health, and university health and health education resources, and would be expected to vary in accordance with local needs.

Many promising programs of service and training have already been initiated through the stimulus of Federal support under a variety of agency auspices. Most of them are, as yet, too new for their full positive impact to be felt. The recent comprehensive planning legislation offers a superb opportunity to get at the basic issues of how health care and training should be organized for maximum effectiveness. It is essential that program planning proceed from sound analysis of needs and clear definition of goals. The conference groups, therefore, addressed themselves to such questions as:

- What constitutes optimal health care?
- What important trends in patterns of service can be identified?
- What are the starting points for planning optimal health care services?
- How can services be closely keyed in with specific consumer needs?
- How can consumers be motivated to use them well?
- How can we translate what we know about human health and development into effective services?
- What are the manpower needs in the health care field?
- What specific functions would be performed by each member of the health care team?
- How can the effectiveness of professional manpower be expanded and enhanced through use of new kinds of allied health personnel?
- What kinds of training do various kinds of professional and allied personnel need?
- Where should responsibility for training various types of personnel lie?
- How can training be closely related to today's expanding health care needs?

In the past, participants said, we have talked of health care problems of crisis proportions without defining what the problems are or how they can be solved. We now have the means and the knowledge to make the building of optimal health more than a goal to be talked about. It is time to translate this goal into action and positive reality.

Components of Optimal Health Care

We do not have, in this country, anything which can legitimately be called a health care system, participants said. Health services have not evolved in an orderly, efficient fashion but have multiplied like weeds, often overlapping and competing with each other and leaving large bare patches where there are no services. The principal reason for this is the difficulty of defining the components of optimal health care, or indeed, of optimal health.

What, exactly, is optimal health? The definition, participants suggested, is partly a research question and partly a value question. In order to know what is optimal, we have to know both the immediate and the long term effects of various influences on physical condition, emotional adjustment and organizational behavior. There are many important factors besides physical condition which contribute to optimal health: family income, education, nutritional status, housing, air and water pollution, to name only a few.

Good health services are obviously necessary to achieve and maintain health, but health services as a goal are meaningless unless we know toward what they are leading. Therefore, we have to ask, optimal for what? In relation to what? Conceivably we could eventually produce a super-race in which everybody would be six feet four, have an IQ of 150, and live to be 100 years old. But surely this is not our goal. Perhaps the best we can do at this point is to sort out what we see as desirable and undesirable and then ask objective questions about what makes people tall or short, intelligent or stupid, well or sick, and what effect their development will have on their children and their children's children. Research can give data of this kind, but society has to decide the policy issue of what values it sets on various aspects of healthy development and how these values shall be translated into services.

Optimal health care, participants stressed, must encompass the total life span from the preconceptional period onward. Some participants felt that the limiting term "health" should be abandoned for one stressing all aspects of human development. But whether it is called optimal health or optimal human development, the concept requires that a child be not only "well-raised" but also that he be "well-born". To be well-born, a child must first have the opportunity to live, and this right--to life itself--is denied approximately 200,000 individuals who die each year in this country during the perinatal period.

More importantly, infants who survive the birth process in a condition which at best can be described as being inadequately born constitute a loss which in numbers and in cost dwarfs even the annual loss of life itself. This annual wastage of human life and human potential exceeds the combined annual number of deaths from all types of cancer, the number of deaths in automobile accidents each year, and the total loss of American life in the war effort in Viet Nam. The right to be well-born is therefore paramount to any discussion on child care. The annual production of a quarter of a million inadequate citizens in the United States of America each year is mute evidence that for many this right is abrogated by circumstances surrounding the birth process.

As yet, no one has been able to define the mininum quantity or quality of preconceptional, prenatal, delivery, postnatal, or pediatric service compatible with optimal care, but current statistics on perinatal and child mortality and morbidity attest to the fact that improvement is needed. However, medically oriented programs alone will not solve the problem. The injustices of our social structure--inadequate housing, inadequate nutrition, inadequate education, inadequate sanitation, inadequate employment, inadequate finances--are factors known to be associated with reproductive failure, and these factors must be corrected before morbidity and mortality, particularly in the perinatal interval, can be substantially reduced.

Of what value is it to insist on repetitive prenatal care when attendance at the clinic decreases the amount of money in the family food budget? Of what value are multiple screening laboratory procedures if the family has no means of obtaining medical-care for the ailments that are identified? What is gained by hospitalizing a pregnant mother for high blood pressure or heart disease if her other children are left without any care or guidance? What is the value of notifying the authorities of a teenage pregnancy or an induced abortion when exposure means expulsion from school? Too often counseling of indigent mothers, married or unmarried, is simply lip service because society does not have the necessary mechanisms to help them improve their situation.

In the past, pregnancy and delivery were regarded almost exclusively as physiological processes. Now recognition of the psycho-social components of these processes is leading us toward a closer alliance between medicine and the rest of society. In time, the right to be well-born and well-raised may be recognized as the most important of the inalienable rights of man.

Furthermore, it is as important to society as to the individual. The nation's future depends in large part upon the provision of services which will make it possible for children to become healthy and economically productive adults in an increasingly complex technological society. Unless we can transcend the new problems of society, the limits of our national welfare will be sharply circumscribed. We cannot afford to have nonproductive citizens and residents of ghettos represent a major proportion of the population.

Our national goal must clearly be to provide freedom from disabilities, whether they spring from hereditary causes; prenatal, perinatal, or postnatal conditions; or conditions originating in childhood or adolescence, so that each child can achieve his maximum developmental potential as he grows to maturity. Health care, in this context, encompasses encouragement of normal development as well as services to prevent, control or cure illness. The age span of concern of obstetrics and gynecology must overlap that of pediatrics, starting before the young girl reaches childbearing age and extending throughout the childbearing years. This means that such services as sex education in the schools, premarital counseling and family planning must be part of optimal health care as well as services surrounding pregnancy, delivery and the postnatal period.

It should not be too difficult to devise specific programs to improve the results of reproduction and negate the loss of lives, since several of the major areas needing attention have been defined. We know a great deal about which populations are particularly vulnerable to complications of pregnancy. The crux of this part of the problem is finding ways to reach these vulnerable groups with the information and services they need. This should encompass counseling which includes information about diet and other factors contributing to a healthy pregnancy, common hazards of pregnancy and symptoms of trouble, fertility counseling, and physiological and psychological preparation for marriage and childbearing.

Prenatal care should include not only routine assessments of physical conditions but preventive care, correction of anemia, malnutrition and infection recognition and appropriate therapy for toxemia, RH sensitization, diabetes, and heart disease; identification and treatment of personal and social pressures.

Delivery care should include attention to obvious factors like the cleanliness, asepis, and accuracy of laboratory data. Every precaution should also be taken to see that special problems like malpresentations, dysfunctional labors, and intrauterine infections are recognized and skillfully handled. A well-stocked blood bank and adequate anesthesia and resuscitation services can be crucial in survival of mother and child, but many delivery facilities are inadequately equipped and staffed at the present time.

In addition to preconceptional, prenatal, delivery, and postnatal services, optimal health care should include full medical, dental, and developmental assessments for all children; casefinding; preventive services like immunization; followup of any problems which can be ameliorated and education in the promotion and maintenance of good health. All of these services should rest on a reasonable floorboard of economic security and such services as vocational training and day care. It is perhaps premature to be talking of optimal health care services when we have not as yet succeeded in assuring even minimal health for all citizens.

Many of the components of optimal health care listed by the participants are, of course, already included in existing programs, and there is nothing wrong with the elements we now have, they said. It is the way they are put together which is wrong. Care is fragmented and people wander about from one place to another getting more and more confused about where to get the services they need. Some members of the health care team should be trained to shepherd patients through whatever medical care system exists.

Changing Patterns of Health Care

There have been many changes in patterns of health care in the United States since the family doctor made his rounds by horse and buggy. As medical knowledge increased, more and more specialties developed. Not only was the care of families splintered among many specialists, but individuals themselves were subdivided in terms of the type of care they required. It is not unusual to hear members of middle class families complain of having too many specialists--obstetricians, internists, pediatricians, psychiatrists, ear, nose and throat men--but no one to call if someone in the family gets "just plain sick." Members of low socioeconomic families, on the other hand, often seek medical care only in emergencies or in the case of severe handicapping conditions, and the type of care they receive depends upon what is available for families of limited means in the area where they live.

Another basic change which has affected patterns of care has been the shift from a disease orientation to a health orientation as increased medical knowledge has broadened the preventive and rehabilitative potentials of medicine. It used to be taken for granted that most women would have one or more stillborn infants, and that fairly high percentages of each family's children would die during their first few years of life. This no longer needs to be true, and the realization that normal, healthy development is a valid possibility for most children has increased both the services that are available and the demand for them.

Currently the trend in health care is moving in a new direction, back to the concept of family-centered care, but still further away from the "family doctor" concept in which one practitioner assumes responsibility for all types of care. The community-centered team approach to health care appears to offer the best hope of (1) making use of the accumulated knowledge of many disciplines, (2) conserving professional time so that it can be devoted to the areas of greatest competence, and (3) serving the enormously expanded population in need of care.

Not all participants were convinced that this is a desirable trend. We tend to be detoured by phrases and fads, they said. Currently, it is popular to proclaim that the family must be treated as a unit and supported as a unit. What evidence have we that this is so? How can we be sure that family-centered care is not just a middle class mystique about which the non-middle class person has learned to verbalize when asked, but finds embarrassing when he is actually faced with this pattern of delivery of service? What is the reality toward which we should program? Before we launch programs costing millions of dollars we need to know exactly what we are doing and why. There are fantastic numbers of variables to be considered. Decision making and public policy regarding health services need to proceed from a sound basis of research.

Other participants felt that present evidence is sufficient to support belief in comprehensive family-centered health care as the most promising way of meeting expanding needs. Practicing medicine on a businesslike, entrepreneurial private care basis is the middle class mystique, they said. It is not realistic in terms of the needs of low income patients, nor is it realistic in terms of manpower usage. There are not enough doctors to go around on a one-to-one physician-patient basis, even if the people who most need health services could afford that kind of care. The health care team is the logical way to get more services to more people.

The distinction between the team approach and group practice needs to be clearly understood. Group practice may nean nothing more than a sort of partnership of several physicians of the same or related specialties, while the use of a health care team implies an effort involving professionals of several disciplines and ancillary personnel trained for a variety of duties to be performed under professional supervision.

A number of programs have already been developed around the concept of comprehensive family health care. For example, Harvard University Medical School recently set up a new program in Cambridge City Hospital, a hospital which is being developed as a community-oriented institution geared to the needs of residents of the area. The program will not provide all the specialty services available in a large general hospital, since these are available just across the river at Massachusetts General Hospital; but the hospital's facilities will be expanded by bringing laboratories and well-baby clinics which already exist in the area under the direction of the University. Cambridge Hospital makes a particularly good model because it is located in an area which provides a good cross section of middle and lower income families. The hospital has become a teaching hospital for the medical school.

The medical departments of the University have worked closely with economists, public administrators and behavioral scientists to determine how the health care program should be developed. Since these cooperating members of other disciplines remain attached to their own departments, it is hoped there will be a good feedback among the various disciplines. It took nine months to work out corporate, legal and insurance problems. It may be possible to include care on a contract basis for recipients of Public Assistance and Aid to Families with Dependent Children, and under Medicare and Medicaid.

Some participants question whether hospitals, by their very nature disease-centered, are an appropriate focal point for the more broadly defined types of health services that are needed. Others felt that they are the most logical focal point for a number of reasons. If we are to cope with the enormously expanded needs for services there must be a complete breakthrough to provision of services on a wholesale basis. This means providing services where there is adequate manpower. In the hospitals, residents and interns can handle a sizeable portion of the work load. However, ways must be found to make the relationship between patients and the house staff more personal and more acceptable to the patients. Indigent patients are not going to accept the idea that they are second class citizens who can therefore be "taught upon", nor should they be regarded in this way. The goal of a single quality of care for private and non-private patients must be given more than lip service.

Much emphasis was given to the need to provide services which are easily accessible to the people who need them. Experience has shown that for a variety of reasons many people in need of care cannot or will not come any great distance for care except in emergencies. However, services should not be haphazardly extended outward from the hospital. Unless there is careful development, the result could only be a makeshift hodgepodge.

It was suggested that one constructive way of extending services might be for universities to set up health care teams which would serve a number of community centers on a rotating basis. These would be clinical teaching units as well as service units and might include obstetricians, pediatricians, residents, nurses, students, and members of other appropriate disciplines. These team efforts should be coordinated with the hospital-based services so that a patient coming to the hospital for delivery or because of complications of some sort would be seen by the same team that had seen her in the neighborhood center. One of the difficulties in providing effective care in the hospitals is often that the patient is taken care of by people who have never seen her before and know nothing of her medical history except what she is able to tell them under these stress conditions.

Within the hospital, also, there should be continuity of care. Why is there, in most hospitals, such total separation between the outpatient prenatal clinic, the inpatient maternity ward, the delivery rooms, the nursery and the followup clinic? Would it not be better to give at least some members of the health team a chance to establish a continuing relationship with the mother, including followup care in her own home where she can really learn to take care of the baby? It might at least be possible for one member of the team, perhaps the nurse or social worker, to carry through the entire sequence of care.

But should there not also be some carry over mechanism which would correlate information on infant mortality rates in the census tract in which the mother lives, with the place of the child's birth? In this way, hospitals would recognize high risk cases and could keep track of babies born there, throughout the years of maximum risk.

Creative Planning for Optimal Health Care

Enough preliminary work has been done that bolder, more comprehensive planning for optimal health should now be possible, participants said. It is time that we stop inching our way along and doing piecemeal planning. In the face of our awareness of a great need of large groups of unreached children who are suffering irreparable damage, we are trying to maneuver out of our established orbits by putting out tentative pseudopods. We are reaching only a little further out in an attempt to establish a new frontier, and expanding our traditional patterns of service to only a limited extent.

We need to think in terms of great strides instead of a step at a time. We need to identify all the children at risk and program for them, instead of having to reach out later and pick up the pieces of shattered lives.

This does not mean we have to give up our traditional healing approaches. They will always be needed, but we also need to discover how to approach the much abused concept of prevention. We must think of manpower, both in terms of better use of what we have and in terms of new kinds of manpower that may be needed. We must think about the uses we can make of the many new technologies we have developed. For example, what would happen if a mobile health unit had a two-way television hookup with the medical center so that there could be on-the-spot consultation with mothers and babies in their own communities? The Navy has been using radio hookups this way for years. This kind of bold step in developing networks of communication would allow us to stretch our manpower potential, not only in medical consultation but in areas like parent education.

Finally, we need to think more about the relationship between learning and health care services. Evidence indicates that many patterns of personal and sexual identity are established by five or six years of age. This means we need to reach the parents, and through them the children, with broad-scope health education before the child starts to school. How can this best be done--and perhaps even more important, what can we do to preserve the capacity of children to learn during the first five years of life?

A number of the participants pointed out that there has been much excellent health legislation in recent decades but that some of the most encouraging advances in building toward optimal health have come through legislation centering around social welfare and education. This is, in part, because most of our patterns of health care have been developed for middle class patients, and in general the health care system has simply extended existing patterns to low socioeconomic level patients. We have worked hard to develop standards for health care. They are good standards, and we do not want to change them. Therefore, we have to find ways to spread our services to the unreached without diluting these standards.

Developing a program of services in a vacuum would have little practical significance. The problems in Florida differ from those in Alabama or Wisconsin or Colorado. Even within a state or city they differ. What is needed in North Central Florida is totally different from what is needed in Miami or the Panhandle. What is needed in the urban ghetto is different from what is needed in sections of the same city peopled primarily by economically comfortable retirees.

Programs need to be developed by community leaders in health, education, welfare, law, economics, environmental planning, business, communications and other fields. Only those most familiar with their own areas can define the problems and the appropriate solutions on the basis of common need. There are several possible approaches to this: commonality of need based on geographic location, on the character of certain population groups, on particular areas of clinical concern, on problems of particular age groups. The important thing is that the problems be defined very specifically in terms of what we know about human growth and development. Then we need to set up blueprints for such programs and move boldly into demonstrations which can serve as models of how communities can reach all children and provide for their needs prenatally and postnatally.

The Comprehensive Health Planning and Public Health Service Amendments of 1966 offer opportunity to free health planning from the fragmentation that has been fostered by previous funding mechanisms. Under this legislation, the planning agencies have no program bias of their own but are designed to provide a forum for communication among the various program agencies of a community. The approach includes social planning as well as health planning.

Some participants questioned whether this will, in fact, decrease the overlap which now handicaps the programs of agencies like the Office of Economic Opportunity, the Children's Bureau, the Department of Housing and Urban Development, and various other public health, welfare, and mental health programs. Constructive partnership among Federal, State, and local agencies has not yet been fully achieved at the levels of planning, financing or implementation.

Coordination is often incredibly poor. In one state, a department of education set up a facility for unwed mothers without any consultation with other departments and without even knowing that such facilities had to be licensed by the Department of Welfare. Coordination at the local level is sometimes better than at the state level, but even so, endless examples could be cited of competitive, overlapping services or lack of awareness in one agency of another agency's programs. How can competitive attitudes be overcome when each agency is fearful of being subordinated to another? As one participant put it, everybody believes in coordination--if he can be the coordinator.

It is unfortunate that there is so often a tendency to start each effort as if it were a brand new idea. Many important innovative programs in health care have been developed which should be studied carefully for possible guidelines. Much material is available on neighborhood health centers developed under OEO auspices, on special programs of nursing care, on the training and use of auxiliary personnel in mental retardation centers, mental health centers, and regional heart and cancer programs.

We might also profitably study the health care systems of other nations to see what might be adaptable to health care needs in this country. The level of coordination is quite high under the National Health Service in Britain, for example. Dr. Stephen Richardson reported that Aberdeen, Scotland, a city with a population of nearly 200,000, has a corps of 75 to 80 full time Health Visitors trained in public health nursing and social work. These Visitors are required by statute to visit every home, regardless of economic status, a minimum of two or three times per year between the birth of a child and the time he goes to school.

This system has the great advantage that the Health Visitors see the families not only when the children are sick but when they are well. The Health Visitor learns to use her time strategically. In families she judges to be functioning well, the required visits are often very brief; but in families with special problems and several preschool children, she may be in and out several times a week, more often than the statute requires.

She provides a liaison between the family and the health services and works in close cooperation with the family's doctor. The family doctor and health visitor know the range of health services and other social services available to assist families and can bring appropriate services to bear without concern for the family's ability to pay for the services.

The quality of the program, of course, varies from one community to another. The quality depends mainly on the attitude of the medical officer of the city. In Aberdeen it works well because the medical officer is a strong believer in preventive medicine.

A number of participants suggested that the universities and medical schools have a unique contribution to make in the community's attempts to provide adequate care. Drawing upon their expertise to help set priorities and demonstrate better systems and better manpower uses, they can help pinpoint the basic issues of institutional change. Planning for optimal health care services entails more than the mere shoring up of outmoded concepts. However, this requires a genuine commitment to the concept of comprehensive community health care. Such motivation is at present lacking in many universities which see their function only as one of communicating known bodies of facts to students. Required also is a commitment to the concept of "building in" mechanisms to enable communities to continue operating after their support as demonstration programs expires. This is a dilemma currently facing many programs which were meant to stimulate local action and local responsibility. There appears to be a very real danger that termination of federal support will sound the death knell for many of them and neither the school systems, the health and welfare systems, nor other established institutional systems in the communities will have been basically and permanently changed.

Some participants disagreed with others who felt the universities and medical schools should be actively involved in provision of clinical services, and suggested that the universities should consciously circumscribe their own role, concentrating on building strength and responsible leadership in the community. They should help determine who the ultimate agents should be in provision of health care, how programs can be most effectively organized, and what the most effective points of entry are for bringing about necessary changes in community systems of services. The universities should not carry continuing program responsibility; they should maintain a clearly defined role as stimulators, demonstrators, and objective critics.

Mr. David P. Willis offered a specific example of the way a university can serve as an instrument of social change. Temple University in Philadelphia is somewhat unusual in having a Health Science Center rather than a medical school only. In addition to the medical school, the Center includes a dental school, school of pharmacy, and a College of Allied Health Professions which offers training in nursing, physical therapy, and for medical librarians. The Center and the hospital function administratively under a Faculty for Health Care which includes many disciplines. This interdisciplinary structure puts the Center in a good position to plan experimentation in health care systems.

For example, obstetricians on the Health Care Faculty became concerned over the fact that they were seeing 14 and 15 year old pregnant girls for the first time at delivery--the girls were receiving no prenatal care. Furthermore, these girls often proved to be the same ones they had seen the previous year under the same circumstances. Here was a biological fact--a health problem--yet the situation was obviously much more complex and needed a kind of attention the obstetricians alone could not give it.

Under the procedures of the Health Science Center, the hospital social worker was drawn into the discussion; then various university departments, such as education and psychiatry. The courts were contacted. Gradually, certain significant facts about illegitimate teenage pregnancies began to emerge. There was a high correlation between the repetitive pregnancy and a low reading ability level, and it appeared that some of the girls might use pregnancy as a convenient excuse for dropping out of school. Most of these girls had histories of repeated involvement of one kind or another with the courts. The state and local welfare agencies, district school officials and other community agencies were joined in the effort, which began to reveal the gaps in service that allowed these girls to go through one pregnancy after another without ever obtaining the kinds of help they needed to reorient their lives.

Altogether, the University spent a year and a half gathering data to clarify the problem, examining community resources and developing plans for a workable system of interrelating services. Consultation was sought and received from several federal agencies. The University will continue its advisory function until the program gets on its feet and plans for its continuing administrative and financial support have been worked out.

FOCUS ON THE CONSUMER

During the five conferences, the participants referred many times to the baffling fact that the very people who most need health services are the ones who fail to use them when they exist. Why do women ignore the availability of prenatal clinics and appear for the first time at the hospital door at the time of delivery or under the stress of some emergency condition? Why does medical advice so often go unheeded by those who do come in to clinics as patients or bring their children in for care? How can optimal health for all children and their families become more than an idealistic goal?

The clues to the problem seem to lie in five principal failures in the approach to health services:

- the failure to listen to what the consumer has to say about his health care needs
- the failure to apply what we have learned from research and from experience
- the failure to wipe out fear and establish genuine communication
- the failure to teach the consumer the things he needs to know to protect his own well-being and that of his children
- the failure to involve the consumer as a partner in the health care team.

Too often we design health services to suit patterns of financing, educational and research goals but fail to think in terms of having the right people in the right place to develop the right relationship with the consumer. In our zeal to provide health care that will meet professional standards of excellence, we lose sight of the flesh and blood human beings we are trying to serve. The consumer becomes, in effect, the forgotten man.

The Role of the Consumer in Planning Health Care Services

The fact that many existing health care services are not fully used by the people they are designed to serve is one of the most compelling arguments for consumer participation in the planning of services. This does not necessarily imply that the consumer should be involved in all of the decision making processes. Decisions on some aspects of programs require a level of technical knowledge which can be supplied only by people trained professionally in various fields.

Two hundred years of health care experience have shown that it doesn't work for practitioners to make all the decisions about services. Yet recent experience in OEO and other programs has shown that too great reliance on the consumer to define his needs doesn't work either. Some "new mix" is needed which combines the technical knowledge of professionals of many disciplines with the practical, on-the-spot awareness of the consumer.

Where the guidance of the consumer is most useful is in defining unmet needs, determining why services are not being used, and indicating what kinds of services would be used. In addition, representatives of the community to be served can provide the communication link between the practitioners and program administrators and the people of the neighborhood who may be too timid or too inarticulate to make their needs understood or to make use of the counsel they receive.

Efforts to involve the consumer in program planning often bog down because of the tendency of upper middle class professional workers to lump all residents of a target community together. This is particularly true when the professionals are white and the services are in predominantly Negro areas. The professionals may assume they are working with true consumer representation if they include Negro community leaders in the planning groups, when in fact the communication gap between the middle class Negro leaders and the poverty level residents of the community may be just as great as between these potential consumers and the professional workers.

There are some special instances in which the consumer may be better qualified to make decisions about what is needed than the professionals. For example, many of the advances for handicapped children have been achieved through formation of parent groups. Although some parents undeniably contribute to the social and emotional adjustment problems of their handicapped children, others may be more aware of the child's total needs than the professional worker who concentrates on one aspect of a child's problem. The professional may concentrate so exclusively on obtaining appropriate physical therapy or special education services for a child that he fails to realize that the child's social adjustment problems may be far more important and that what he most needs is help in functioning more adequately in his human relationships. We are beginning to see a great many cases now of young people who have had years of extensive medical service and vocational training but are unable to keep their jobs because they do not have the necessary social adjustment skills. The professionals have not been unaware of this problem, but they have, undeniably, failed to solve it; and it may well be that the parents who live day in and day out with physically handicapped or mentally retarded children will be the ones best able to suggest the types of intervention that are needed.

Even on less specialized medical problems, it is sometimes easy for professional people with particular goals in mind to overlook the obvious. There has been much speculation about why prenatal clinics are not more fully used. At the same time, emergency rooms are crowded far beyond capacity. This is, in effect, a clear message from the consumer about the type of service he feels he needs and will use. This does not mean that efforts to get pregnant women to recognize the importance of prenatal care should be abandoned. It does mean that closer attention should be paid to what the consumer is saying through his actions about services that fit into his way of life. It is the task of the professionals to discover better ways of providing essential services like prenatal care within the cultural framework of the consumer's life. For example, few medical care settings combine prenatal and pediatric care--yet the chances are better than even that the pregnant woman who comes in for prenatal care already has other small children and quite probably no place to leave them while she goes to the clinic. Why should care not be arranged for her convenience so that her problems of prenatal care, baby-sitting, and pediatric checkups can all be handled simultaneously?

We talk a great deal of changes that are needed, yet we have great resistance to trying innovative patterns of care. For example, more than one third of the labor force in this country is made up of women, a high percentage of them in the childbearing and childrearing age bracket. Logic suggests that not only day care but a whole range of medical and social services should be offered where the women work. This has been done with considerable success in other countries, but only isolated examples of this pattern can be found in this country.

To cite another example of our failure to respond to the clues consumers give, high school dropouts--the putative consumers of education--tell us clearly by their action in dropping out that they find the curriculum irrelevant to their way of life. Yet we have not really heeded what they are saying about this attentively enough to enable us to devise substitute educational approaches which will equip them for the kinds of lives they lead. This failure will inevitably take its toll on the health and well-being not only of the dropouts themselves but of the children they will one day bring into lives of poverty and hopelessness. By allowing these young people to disappear from the schools we also shut off one of the best potential channels for reaching them with health information and services.

In Hershey, Pennsylvania, development of the new Medical School has been closely keyed in with research into existing patterns of delivery of health services. Because Hershey is a stable, semi-rural community where no modern medical center has existed until the past year or two, it offers a unique opportunity to tailor the development of services to the needs of the consumers as they themselves identify their needs.

No one really knew where the residents of the community went for medical care or what the sequence of events was before they sought care. The Medical School has begun a study which is expected to provide some baseline measures of the sequential pattern. It is hoped that this study can be continued for several years so that the impact of the new medical center can be assessed.

The study is not concerned solely with the incidence of diseases and illnesses in the community but more particularly with how the people feel about health problems and health services and what they do about them. A random sampling technique is being used. General questions like "Has your family been sick much?" are avoided. Instead, an individual is asked to describe his most recent illness or the last time he went to the doctor. A considerable body of specific information about how the families of this community handle their medical care problems is being accumulated. This will be most useful in the training of medical students and in devising patterns of service which will be acceptable and useful to the people of the community.

Applying What We Know About the Consumer

We often assume that the United States is ahead of most other countries in relation to child health, but the unfortunate truth is that by standard indicators such as infant mortality and prematurity we are lagging behind other westernized countries. A great deal of epidemiological research has been done which has identified high risk groups in the population, but we have not as yet found adequate ways to apply what we know about them to solution of their problems.

Many handicapping conditions can be identified during the first week of life. Since a high percentage of deliveries occur in hospitals, it should be possible to intervene in ways that will minimize damage for many of these children. This obviously does not solve the problem of preventive care during the preconception and pregnancy periods, but it is a starting point which could benefit both the handicapped child and any siblings who may be born in future years. This is particularly true in types of handicapping with a high familial incidence, like phenylketonuria, but it may also be true of children whose handicaps spring from inadequate nutrition or other correctable problems in the mother.

Studies of emotional factors related to pregnancy are going on in many research centers. Some attempts are being made to do studies extending over a period of years to see whether there are correlations among anxiety in the mother during pregnancy, difficult delivery, and the development of emotional disturbance in the child at a later age. It is, of course, essential to recognize that correlation and causation are not the same. It cannot be assumed that anxiety necessarily causes the difficult delivery; there may be physiological causes. Nor can it be assumed that certain attitudes in the mother prior to the child's birth predispose him toward disturbance in later years.

There is a need for further research on the coping mechanisms of patients in response to various types of situations and on the effects of various types of manipulation. A descriptive study done at Yale has shown a wide range of facial expressions of women during labor and in interaction with their newborn infants. A manipulative study is planned as a followup, to see how various types of intervention affect the mother's patterns of coping with the stress situation. What will it take to shut off a distress response? Will more information about what to expect help the woman to cope more easily? What about TLC; will it work with all patients or only with some?

We need also to question whether present trends in hospital utilization may not be contributing directly to child health problems in high risk groups. A nurse participant spoke feelingly of the problems created when a mother is sent home too soon after delivery to be able to cope, unaided, with the problems of her own recovery and of proper care for her newborn child whose navel and circumcision are not even healed, in a cold-water flat, with 90 steps to climb down -- and up again -- to get to the street where the nearest bottle of milk is still quite a few streets away. Physically, the mother is not capable of taking care of herself, let alone a child who needs nursing care. Yet in many hospitals mothers are sent home within 24 hours, 48 hours, or 72 hours after giving birth. The mother needs to be fully functional before she goes home to take care of her baby -- but our philosophy seems to be that the less money she has, the less functional she needs to be.

Mothers without household help from relatives or neighbors often lack other home care aid. Many mothers greatly need a continuity of health care supervision which is not available to them in the days immediately after discharge from the hospital. They are on their own to decide what may be normal or abnormal about their infants or themselves and what to do about it. Thus, they are disadvantaged on many sides.

It would be a lot cheaper -- financially and in terms of human and social costs -- and it makes more sense, the nurse concluded, to prevent problems than to send these disadvantaged mothers home to conditions that present such hazards.

It is true, other participants added, that failure to provide adequate care for disadvantaged mothers and infants is a costly error. The causes of this failure are complex, involving not only the personal and financial handicaps of the families themselves but the lack of adequate community health services, the rising costs of health care, and many other factors.

The individual pays and society pays, too -- in terms of infant mortality rates, morbidity, and children whose resultant disadvantages may be obstacles for them for a long time to come.

It is, of course, obvious that medical care, however excellent, cannot provide the answer for the underlying problems of the high risk family. If a family has an income of $1800 a year and no food in the house, no amount of health guidance is going to help. Child health must rest on a solid economic floor, and this, in turn, must rest on an educational base which prepares people to hold their own in an increasingly competitive world.

In relation to health care services, another crucial gap occurs between the perinatal period and school age. These are crucial years particularly for the physically handicapped, the mentally retarded and the culturally deprived. Severely handicapped children usually receive some of the care they need, but those with milder handicaps are virtually in a no man's land. Without proper care, they retrogress and when they finally come into care at school age, it is twice as difficult to undo the damage that has occurred. Because of the tradition of private medical care in this country, this area of need continues to be neglected. Even in relation to private care, it is not given the emphasis it should have. A recent handbook for practicing physicians published by the American Medical Association devotes a single page to the subject of medical intervention in retardation cases. This is not only a question of a need for better organization of services; it is also a need to create a much more active awareness of the needs of children in this age group, both normal and handicapped.

Dr. Stephen Richardson, Director of Research of the Association for the Aid of Crippled Children, reported on a number of research studies which have important implications for intervention designed to build optimal health. There are many ways to classify families in health studies, Dr. Richardson said; by family income, father's occupation, educational level of the parents, social mobility, race, religion, area of residence, family size, the discrepancy between the number of pregnancies the mother has had and the number of living children, the spacing between pregnancies, prematurity rates, and perinatal deaths. What data are used will depend on the research issues and questions being investigated. For example, a study of 15,000 children showed that in every social class, children between the ages of eight and ten whose birth weight had been less than five pounds and whose gestational age at birth was less than 36 weeks had lower scores on intelligence tests taken at age 7 than children whose birth weight and gestational age had been six pounds or more and 40 weeks or more. This points up the importance of looking at the relationship between early developmental factors and later development.

Over a period of years, a wide range of studies has been undertaken by Sir Dugald Baird and his colleagues to examine the social class distribution of reproductive risk, and the associations between various obstetrical complications and the outcomes of pregnancies. Recently a program of studies was undertaken to examine the association between handicaps in childhood and social and biological background factors. The results of one study which encompassed all mentally subnormal children aged eight to ten resident in Aberdeen were being prepared for publication in book form at the time of Dr. Richardson's reports to the conference groups. The following are some highlights of the findings:

- The lower the social class, the greater is the prevalence of mental subnormality. (Prevalence is the number of children per 1000.)
- The distribution of children with central nervous system damage and IQs of 50 or less is random across all social classes, while milder subnormality without central nervous system damage is more prevalent in the lower social classes.
- No cases of mild subnormality (IQs of 50 or more) were identified in the upper social classes; all of the mentally retarded children in these classes were severely subnormal. But in the lowest social classes, mild subnormality without CNS damage predominated; less than half of the mentally subnormal children in these classes were severely subnormal.
- Obstetrical complications occur more frequently among mothers of severely retarded children than among mothers of children who are mildly subnormal.

Although much has been learned about high risk groups, many additional questions remain unanswered, and they cannot be answered by a single discipline. One cannot work solely from a physiological-pathological model on such problems. The physician, the social scientist, the educator, the economist, the anthropologist, the behavioral psychologist and others all have important contributions to make in untangling causative strands and devising programs of prevention and correction.

Communication Between Doctor and Patient

One of the most baffling problems in health care services is that people who seek medical advice so often fail to carry through on the instructions they receive. Where does the problem lie: in lack of motivation? differences in understanding? failure to grasp the importance of correct dosages at designated time intervals? Is the problem based in social class distinctions which cause resistance or fear? Why does a patient tell the physician one thing and other members of the health team something entirely different? How can a productive level of communication between the supplier of services, the physician, and the consumer-patient be established?

These are extraordinarily complex questions for which no satisfactory answers have yet been found, although some provocative research has been done. Some years ago Dr. Barbara Korsch, now at Children's Hospital, Los Angeles, undertook studies to determine why the parents of pediatric patients so often fail to follow the medical advice given them, and to discover whether something in the interaction between physicians and parent relates meaningfully to the outcome. This was not a study of doctor-patient relationships. It was a study of communication in an individual encounter and did not attempt to cover the many other aspects of doctor-patient relationships.

Initially the study was conceived as centering on how to bridge the gap in doctor-patient communication, but it quickly became apparent that it was first necessary to define the nature of the gap. Thus communication was considered the independent variable; the outcome, the dependent variable.

One of the first things that became evident in designing the study was that the guidance of investigators in many fields was needed. The study staff worked with medical sociologists, psychologists, and computer technologists to develop an interview technique that would capture how the parent understood and felt about the doctor's advice, and at the same time would be amenable to reliable scientific analysis. In the interview schedule which was finally adopted after several pilot studies in various areas had been done, the clinical impressions of the patient were recorded as well as the parent's answers to specific questions asked immediately after the interview with the physician. These were designed to discover how she had perceived the visit, how she felt about it, what she thought the doctor had told her to do, etc.

Because the short term, one- or two-shot contact in clinics is emerging as an important pattern in medical service, the hospital emergency room was selected as the study locale. Study subjects included all parents who brought in a child for a first visit because of an acute illness, since these conditions involve a distinct pattern of examination and prescription which requires the parent to follow directions given by the doctor. To simplify procedures, certain other limitations were imposed, such as the requirement that the mother be able to speak English without an interpreter.

The initial interview between the parent and child and the physician was tape recorded, with the knowledge of the patients. A control group of non-taped interviews was maintained. From 10 to 14 days later, before the patient saw the doctor again, an unannounced followup interview was conducted in the home or the hospital. Only a few of the subjects, fearful of bill collectors, showed signs of uneasiness about this interview. The validity of information given in these interviews was cross checked when possible via pharmacists, examination of pill bottles, etc.

Among more than 800 cases studied, non-compliance with instructions appeared to run high--but not always for the anticipated reasons. A number of common hypotheses about how to deal with patients began to teeter severely. For example, there seemed to be little correlation between the length of the interaction between physician and patient and the level of compliance. The longer interactions were often simply repetitious, with the pediatrician repeating over and over an intellectual explanation the mother had not requested and did not want.

It was also apparent that compliance with instructions did not necessarily correlate with the educational or socioeconomic level of the patient. Poorly educated patients reacted much the same way that better educated ones did. This appeared to be a less important variable than the quality of interaction that took place between the doctor and the patient.

One of the beneficial side effects of the study was increased interest on the part of the doctors. Walk-in patients are usually anathema to any physician working in an emergency room, but as the study progressed many of the doctors became more interested in the patients and in the research findings. This was not universally true, however. Some of the doctors resented this attempt to study "the art of medicine", considered the use of the tape recorder in invasion of privacy, and showed an astonishing lack of interest in the followup interviews which indicated whether or not the patient had utilized the advice that was given. This suggests that a great deal needs to be learned about the attitudes of physicians as well as the patients when the communication breaks down.

A number of participants discussed the tendency of patients to give different information to different members of the health team. In some cases this appears to reflect self-consciousness or fear related to social class distinctions. A certain amount of suspicion and distrust seems to be inevitable in any relationship involving helpers and those who are helped. The helper acts; the helped is acted upon. Therefore, the helper is perceived as being superordinate and the helped as being subordinate; the helper as powerful, the helped as relatively powerless. The person who is helped usually feels required to be deferential and subservient to those who give help, and this encourages an authoritarian attitude on the part of the helper which further increases the suspicion and hostility of those who are helped. We need to look much more carefully at the way role relationships are structured and how they can be made more inviting and less intimidating.

It has often been noted that patients communicate more freely with staff members of their own ethnic background and socioeconomic level than with professional staff members. Several participants cited examples of physicians, rehabilitation workers and other professionals who would complete their instructions, inquire of the patient whether she understood, and move on to the next, only to find that the patient would turn to an observer, an aide, or some other member of the team and ask, "What was that he said?" One physician making rounds, noticed that a particular aide often lingered with patients after he had gone on to the next. When he asked why, the aide replied, "I just want to find out if they understand what you tell them."

A community mental health center in Harlem has put this concept to use in employing "medical activators." These are non-professional residents of the neighborhood. After being given medical orientation by the psychiatrist, these indigenous workers work directly with the patients and then interpret to the psychiatrist what the basic problems appear to be. By serving as a bridge, non-professional aides are often able to supply valuable information the physician, nurse or other professional has been unable to obtain. This raises the question, to what extent are communication barriers raised simply by the fact of the patient perceiving a professional person as an authority figure?

Also, what is the effect of the way the patient understands the role of each professional? It appears that patients perceive differently what one should present to an obstetrician, a psychiatrist, a social worker, or some other member of the health team. When various members of the team compare information they have received, it may be difficult to remember they have all been talking to the same patient.

By the same token, the way professionals perceive the patient reflects their areas of interest and responsibility; in effect, the professionals see and hear what they are "programmed" to comprehend about the patient. The social worker or psychiatrist will quite naturally filter out different information about a patient than a hematologist or an orthopedist. If a meaningful picture of the patient is to be obtained, ways need to be found to integrate the different kinds of data and determine what they mean in terms of the patient's total needs.

At times unperceived failures of communication can cause erroneous medical judgments to be made. For example, learning that an epileptic child is having uncontrolled seizures, the physician may increase the medication--without discovering that the seizures may have been due to the fact that the mother had neglected to give the child his medicine for two or three days. This does not always reflect deliberate concealment; in her timidity, uneasiness, or lack of understanding, the mother may simply have responded literally to the physician's question about whether the child was having seizures. It may not have occurred to her that it would also be important to report variations in administration of the medication.

The physician needs to be aware that the way he asks questions may make only certain kinds of answers possible, and that he should take care to word his questions in ways that will elicit the information he needs as a basis for medical action. He needs to identify in specific behavioral terms what results he wants his questions and instructions to produce. He does not simply want the patient to show up religiously on schedule for appointments. He wants her to supply the full information he needs to make sound medical judgments. He wants her to give medicine regularly and on time. He wants her to recognize and report any significant changes in the patient's condition. Having defined his specific behavioral goals, he will become more aware of where the breakdowns occur and can more easily devise ways of overcoming obstacles to effective care.

More studies are needed on the effects of various types of communication with patients. For example, in talking with a child psychologist, a mother may respond one way if questions are worded so that she feels pressure to conform to a certain standard of behavior and another way if they are worded so that she feels free to admit that she sometimes can't stand having her kids around.

The whole question of fear as a motivating force needs to be explored more deeply. Studies have shown that fear is a potent motivator, particularly if it is combined with specific instructions on coping with the problem. But what, exactly, is fear; what are the ethical boundaries to the use of "scare tactics"; and how permanent are their effects? Reaction to the release of findings on the relationship between smoking and cancer is a case in point. People were frightened, and there was a sharp--but very temporary--drop in the use of cigarettes before it returned to its steady upward climb.

Because the problems of communication between doctor and patient are so complex, there has been a tendency to seize upon each new study as if it provided the ultimate answers. Few of the findings have been formally replicated and shown to be stable and generalizable. If we are to be able to determine what physicians, nurses, and others need to know to help them communicate more effectively with patients, a number of the best studies should be replicated simultaneously in ten or twelve different locations and the findings made broadly available.

Educating the Consumer About Health

One important variable that must be considered in developing health care services is the level of public sophistication about health and medical care. This varies widely among different population groups, but in general we are dealing with a public better educated, more receptive, and more accessible through modern means of communication than ever before. Unfortunately this creates certain problems of quality control. A great deal of misinformation goes out through the mass media, and ways need to be found to control the accuracy of medical information made available to the public.

One of the greatest gaps in consumer education is in the area of sex education and preparation for the responsibilities of parenthood and family life. No discipline now carries adequately the responsibility for educating people for marriage, although this is obviously one kind of training which should be included in the health care system. No real analysis has yet been made of the kind of education for marriage people should receive, whose responsibility it should be to provide it, what disciplines should be involved and what the role of each should be, or what kinds of training are needed to prepare personnel to fulfill these responsibilities.

What little preparation for family life is given is usually provided through the schools, but it is far too little, too late. We teach the facts of menstruation to girls two years after 25 percent of them have begun to menstruate, and we don't start giving sex information until a not inconsiderable percentage of the class has had sex experience and some of the girls are pregnant. And even then we don't really give sex education. We teach the physiology of sex with diagrams devoid of genitals, and we teach nothing about sexuality in the broader sense. Reproduction is a byproduct of sex, not the whole of it.

It is often said that it is the parent's role to teach sex, and this is true at the toddler level. Of necessity, the parent answers the child's questions as they arise. But in adolescence the lines of communication often break down and many parents cannot teach sex to their own children at that age. Therefore, whose responsibility is it? It is thrust upon the school system which cannot handle it adequately because of restrictions placed upon it and because neither nurses nor teachers are adequately trained to teach sex education.

It is interesting to see what can be done in a community that is willing to try new approaches. In one city, a third year medical student and a young woman in her first year in the school of public health put on a summer school program of sex education for ninth graders. They led the group with great aplomb and there was none of the acute discomfort often shown by older people in discussions of this kind. They broke the classes up into small discussion groups, and many questions were asked and answered freely and spontaneously.

In some cities the public schools are intensifying their efforts to provide health education for both students and parents. Dr. Doris Bryan, Supervisor of Nursing Services for the Oakland, California, public schools, reported that an active program has been developed in a hard-core slum area of that city. Parents meet in groups of ten with school nurses, psychologists, principals, other professionals, and indigenous leaders to discuss whatever health, discipline or other problems they feel they need help on. A psychiatrist, a sociologist, a developmental psychologist and other professional specialists are available as consultants to the nurse-leaders of this program.

It is hoped that family life education for students can be expanded as part of this same effort. At present it centers primarily on films and discussion groups led by the school nurse with fifth and sixth grade students. More definitive health education courses are given at the eighth and tenth grade levels. These are taught by the science teachers with the nurses as resource people.

Of necessity, the Oakland schools are becoming more active in the obstetrical field because of the many pregnancies among teenagers. The school nurses function in a public health capacity, making home visits to work with the girls and their parents in the areas of maternity and child care. There are also two centers where regular school programs are offered as well as group therapy sessions and courses in prenatal, postnatal and infant care are given. Obstetricians, pediatricians and psychiatrists are used as resource people.

Such efforts, of course, represent only the beginning of what the public schools should be able to do in the health education of both children and parents, in preventive health efforts, and in the development of actual health care services. The public schools provide one of the few settings in which children are accessible over a long period of time, in some cases from the age of three to the age of 21. We cannot afford to ignore the potential of the schools when the need for consumer education in all aspects of health is so acute.

There are many families who cannot be reached through the schools whose need for health education is acute, particularly in the areas of maternal and infant care. Pamphlets and other forms of written information are useless in areas where high percentages of the adult population cannot read. Many participants stressed the need for health-related professions to reach out into the community in a teaching capacity.

Much of the information now available about abused and neglected children indicates that parental failures may be caused as much by ignorance as by evil intent. For example, it appears to be entirely possible for a young mother literally to forget the existence of her newborn infant, particularly if the child has been born in circumstances in which the mother might wish to deny the reality of his birth. Unless the mother has the stimulus of another adult with whom to look at and discuss the child, she may simply forget about him - during the high risk neonatal period - unless he does something to attract attention like crying or getting sick. There is very little emotional feedback from a newborn infant.

Concern over the high rate, of hospital readmissions of premature infants in Tuskegee, Alabama, led to development of a study which combines home nursing care with parent education efforts. This study was described to one of the conference groups by Mrs. Elizabeth Richardson, Assistant Professor of Obstetrical Nursing at Tuskegee Institute. The study centered around use of a Teachmobile in which an obstetrical nurse and a pediatric nurse visit the homes during the ten weeks following the child's discharge to his home after birth. The two nurses teach the mothers the characteristics of premature infants, signs and symptoms of illness, and all the ramifications of infant care.

The study, funded by DHEW, covers six of the 67 counties in Alabama. The hospital in Tuskegee gets prematures from 42 counties, however. There is a high incidence of toxemia in these counties; but unless they have complications of pregnancy, many of these women are seen for the first time at delivery, if then. A high percentage are delivered at home by "granny" type midwives.

There is a critical need to expand all health services in these counties. If public health nurses were available, they could do much of what the nurses in the Teachmobile are doing, but there is an acute shortage of public health personnel in Alabama. One health officer has to serve three or four counties, and there is often only one public health nurse to serve a whole county. Although some of the mothers do bring their infants to clinics, these clinics are scarcely functional. They are often located too far from the people to be served, in makeshift quarters in storefront settings or churches, and staffed by only one nurse and no medical officer. If the baby is sick, the only resource is referral to a private physician, and the people can't afford that, so they simply go home and use home remedies which may or may not help.

The study area is primarily rural. Most of the families live in extreme poverty. Housing and sanitation are poor, and the median income level is $1800. Food is in such short supply that the program had to request powdered milk from the Department of Agriculture to meet even minimum needs of the premature infants. The mothers range in age from 13 to 40, with the larger proportion between 13 and 20. About 75% are unmarried.

Although these families have many other unmet health needs, this study focuses entirely on the care of premature infants. For purposes of the study, prematurity is defined as having a birth weight of 5½ pounds or less at nine months gestation or less. Babies are customarily discharged from the hospital when their weight reaches 5½ pounds. Within the group defined as premature, infants with lower birth weights are recognized to be at higher risk than those in the 5-5½ pound range, but all the babies receive the same type of care and attention in the study. Hospital admissions, home illnesses and other information will be analyzed in various ways, including any difference shown by the full term infants and those born at less than nine months gestation.

The Teachmobile visits each home individually rather than stopping at one central location, because it was recognized that a principal problem was the mothers' inability to carry over the instructions they receive in the hospital into the home situation. Only part of this is due to a breakdown in communication and understanding; it also has the practical basis that these homes lack modern equipment for bathing the baby, sterilizing the formula, etc. The equipment in the Teachmobile is used along with whatever equipment the home does have.

Although not all results have yet been analyzed, indications are that this program has been very beneficial in the areas served. Some of the mothers are recognizing signs and symptoms of illness at an early stage and are bringing their babies to the clinics or the hospital for care. Ten of the 214 mothers who have been served during the four year period of the study have had additional premature babies, and it has been evident that they have carried over quite a bit of knowledge from the first experience.

Much that has been learned from this project might be applicable in other areas with similar needs, not only in relation to premature infants but in relation to other health problems. Mobile clinics fully staffed by teams of physicians, nurses, social workers, etc. which could visit various areas once a week would be enormously helpful. A greater emphasis on preventive health care would be possible, including the special problems of female health, contraceptive information, etc. It would also be particularly useful to have a case-finder, since many unwed mothers attempt to hide their pregnancies until it is too late to prevent prematurity and related health problems. When so many health problems have their roots in ignorance, it clearly makes sense to reach out to teach the consumer in the setting where he will be least fearful, most receptive, and most easily able to relate what he has learned to the daily life of his family. This may well be in his own neighborhood or his own home.

The Consumer as a Partner in the Health Care Team

Again and again participants stressed that the health problems of children cannot be solved solely through the clinical approach. Whether the problems involve chronic physical conditions or mental or emotional handicaps, positive permanent improvement almost always requires changes in basic conditions of the child's life. The tragic proof of this lies in the quick loss of gains made under enrichment programs of various sorts when the programs are terminated and the children return to their old mode of life. If the gains are to be consolidated, the parents must be shown what they can do to protect their children's health and help them advance developmentally and behaviorally.

Every baby has certain developmental stages to go through, certain events in his life which bring new tasks to the mother. At each point in development the mother is presented with a different task she must solve. Even if she does nothing in response to the stimulus this is a way of dealing with it, and it has an effect on the child. But if the child is to progress to the next step, the mother must learn to read certain cues coming from the baby. She then has to be able to translate these cues into action of her own which further affects the well-being and development of the child. How she perceives her task in light of her own personality governs how skillfully she handles it.

It is often erroneously assumed that children from deprived areas live in a sort of vacuum or desert--that they are understimulated and haven't had enough "experience" of living. But these children do not live in a desert; they live in a jungle. Rather than being understimulated, they are often overstimulated, overwhelmed, forced to deal with stimuli far beyond their capacity. As a result they often develop precocious adaptive behaviors which become thoroughly ingrained but closed-ended. They are not building blocks, but walls. They are based on a danger orientation; they protect the child from certain kinds of threats and therefore are very powerfully learned--but they tend to be very inadequate as foundations for further learning. So one of the problems in dealing with such populations is how to foster the unlearning of the danger orientation--the specific and effective yet non-fruitful adaptive behaviors--and replace them with adaptive behavior which will build toward health. It is obvious that the child's family exerts enormous influences over the attitudes he develops and over his physical and emotional well-being.

Mothers, fathers, or other relatives--usually totally without medical or behavioral training--are almost inevitably the primary diagnosticians and therapists in child care. Every assessment and every decision-making step is a combination of diagnosis and treatment. If the mother decides, "This is serious enough for me to call someone," she is making a diagnosis and a therapeutic judgment. Where she goes for help governs who takes the next step. Since the parents do play such a key role in assuring the health of their children, it makes sense to help them play this role as effectively as possible by drawing on the strengths they possess and by filling in the gaps in their knowledge.

Programs for both retarded children and emotionally disturbed children, for example, have discovered that neither academic nor non-academic behavior which children are able to master in special school settings is automatically carried over into regular daily living. The children can often function only in the sheltered special environment of the school or institution but quickly retrogress when returned to their homes. It is now recognized that great progress can be made when emphasis is kept on changing the child's behavior in ways that enable him to adapt to the environment of the "normal" world, but permanency of the behavioral improvement depends upon the kind of support the child gets from the responsible adults in his life. Consequently, some programs make instruction of the parents in specific techniques of guiding and controlling behavior an integral part of the child's treatment. Adequate means need to be devised to communicate specific child rearing techniques and attitudes to mothers of limited intellectual and educational backgrounds.

In actual medical care, also, the parents often have an important role to play which goes beyond simply remembering to give a child his medicine when he comes home from the hospital. Hospitalization itself can be a traumatic experience for a child. Some hospitals are finding that children accept the experience with less disturbance and recover more rapidly if their parents participate in their care. In addition, parent participation in care can conserve medical and nursing manpower, reduce medical costs, afford a unique training opportunity for young physicians, provide excellent parent education opportunities, and establish a mechanism through which the health problems of the entire family can be brought into focus.

Dr. Vernon L. James, Jr., reported an experimental program at the University of Kentucky Medical Center. The program grew out of recognition that the diagnosis and treatment needs of children were not being met adequately under the traditional clinic system where children are brought in on an outpatient basis. Interns and residents, seeing a child in a cardiac or other special clinic, were not sufficiently aware of his over-all needs. As a result, a child often had to return again and again to many different clinics before the focal point of his problem was found.

The Center saw the need to bring children in for several days for complete diagnostic workup, but this posed several problems. One was the expense, which many families could not afford. The other was the difficulty of separating the child from his mother.

To overcome both of these problems, the Center set aside 14 rooms of the hospital for a motel-type arrangement where the mothers could stay with their children. There are no nurses on the ward. The mothers are responsible for the care of their children just as they would be at home.

Whenever special needs arise during the daytime or evening, the mothers can call on the help of child care assistants who are not nurses but have received special training in child care. At 10:30 p.m. the child care assistants leave, and the mothers go to bed or read their magazines. They have access to a "hot line" to the paging operator who can quickly call a doctor for them if an emergency arises, but this line has been used only about five times in a year and a half. Over 600 patients were served during the first year of the program's operation.

During the day a nurse from a pediatric clinic serves the unit on a consultant basis. She makes rounds and performs special functions like checking a child over for blood pressure and pulse rate after return from surgery before leaving him in the care of the mother and the child care assistant. Children who are recovering slowly from anesthesia or show any other need of close medical observation are returned for the night to the regular pediatric ward rather than the care-by-parent unit. The nurse consultant is also available to answer questions and perform teaching functions with the parents and the child care aides.

The unit has proved especially useful as a half-way house for premature infants. The mother and child are admitted to the unit two or three days before the baby is due to be sent home. The mother is taught how to make formula, bathe her baby, care for it. Her conceptions and misconceptions about child care can be observed and corrected if necessary. She can be given birth control information or any other special instruction she may need.

While the child and mother are resident in the care-by-parent unit, other medical resources are brought to bear on the family's problems. The mothers are sent down to the GYN clinic for a cancer check, or to other departments if they have special medical problems that need attention. Problems of other members of the family are unearthed and the wheels are set in motion for them to be attended to.

Medical service in the special unit is provided by the same house staff, interns and medical students who cover the pediatric clinic. They see the patients on the ward in the morning before going to the clinic and again in the afternoon after the clinic closes. This affords much greater opportunity for counselling with the parents than is possible in the general ward. In the general ward the intern or resident may spend some time talking with the parent on the day the child goes home, but on the special unit there is a great deal of informal communication. Questions are answered as they come up. This has proved to be particularly helpful in mental retardation cases.

This is a two-way learning process. The intern or resident trained in the traditional way knows little about how to meet the total medical-social needs of patients because he doesn't know what the social needs are. He fills out a formal history on a six-page chart, but he still knows very little about the child's over-all needs. In the care-by-parent unit he learns, directly from the mother, the realities of medical-social needs. This is medical education at a practical level which every student should have but which most of them do not get.

Participants responded with varying degrees of concern and enthusiasm to the concept of the care-by-parent unit. Some felt that admitting the mother along with the child will inrease rather than decrease the demands on the time of the professional medical staff; the hospital ends up with two patients instead of one. Others felt that the benefits to the professional staff and to the child and his family will far outweigh the handicaps.

The old categorical separations of practitioners and consumers, in any case, no longer fit health care needs, participants indicated. Members of the health professions absolutely have to go into partnership with the recipients of health care, not only because it is right and appropriate but because we can't possibly be really effective in improving the health of children and their families unless we do.

MANPOWER FOR OPTIMAL HEALTH CARE

Manpower, the keystone on which the success of every program for human betterment depends, proved to be difficult to define in relation to optimal health care. What kinds of services are required for effective health care programs and how many people will be needed to provide these services? What are their particular functions, and how do they relate to each other? Questions like these, the conference participants said, cannot be answered simply.

Some Aspects of the Health Manpower Problem

Participants in all five conferences agreed that there are acute manpower problems in all the health-related fields, but they never reached full agreement about the nature of the problems. Some felt that there is a critical numerical shortage of physicians and nurses. Others felt the problem is one of better distribution and use of the professional manpower already available, in conjunction with development of new types of supplementary personnel.

Most participants seemed to agree that one manpower bottleneck is the lack of sufficient numbers of people qualified to train professional and nonprofessional health personnel. Most of them also indicated that manpower development is handicapped by inadequate funding for faculty salaries and the support of residencies.

The Dimensions of the Problem

In the United States there are some four million births per year. If every baby were delivered by a physician, each doctor would have to handle more than 300 deliveries per year at the present population level. Even considering that 20 to 30 per cent of deliveries in hospitals are performed by residents and medical students, some conference participants felt the overload is clearly apparent.

The rapid increase in child population since 1940 has not been matched by a comparable increase in obstetricians, pediatricians, and general practitioners. Furthermore, a large number of young women who were products of the post-World War II baby boom are now entering the childbearing years. What the exact pattern of their reproductive habits will be is difficult to predict.

However, when we look at figures on the number of practicing obstetricians, we make some startling discoveries about the manpower available to meet the health needs of these young woman -- and particularly, the quality of care they may receive. According to the American Medical Association, more than 16,000 physicians list themselves as limiting their practice to obstetrics and gynecology. Yet this figure includes only 8,000 Board-qualified obstetricians and about 2,800 residents. This leaves approximately 6,000 self-designated obstetricians who are either untrained, partially trained, poorly trained, or waiting to take their Boards.

Furthermore, we do not know how many of the Board-certified specialists are actually practicing obstetrics. How many are semi-retired? How many are active only in gynecology, teaching, or administration?

There has been a great increase in obstetrical manpower training since the 1940's. In 1940 there were approximately 75 training programs. The number has now risen to somewhere between 375 and 400. Available residencies are, however, only about 90 per cent filled. Each year, approximately 800 residents complete obstetrical training. But more than one-fourth of these are foreign students, most of whom return to their own countries to practice. This reduces the pool of residents to 600 per year. Of the 600, only about 350 enter obstetrics and gynecology. This is an astonishingly small number to meet the health care challenges of the years ahead.

The problem, therefore, is not so much lack of training programs or residencies but the need to maintain a high level of quality in training and to attract a higher percentage of top quality medical school graduates into obstetrics. There is great variation in the percentage of medical students at the various universities who go into obstetrics. It ranges from around 2 per cent in some schools to between 15 and 18 per cent in others. And it is unfortunately true that nearly one-third of approved residency programs in obstetrics and gynecology are marginal in quality, primarily because of insufficient monetary support to provide adequate numbers of well qualified teachers.

These facts have many implications, one of the most important being that a great deal of attention needs to be given to improving the quality of obstetrical training, not only at the residency level but also for the many thousands of physicians already in practice who should have supplementary training which would enable them to become fully qualified. The obstetrician-gynecologist is often the first person a young girl sees in a doctor-patient relationship. Much of her future and the future of her children depends upon that contact.

Some participants felt that present obstetrical training programs can be expanded sufficiently to meet the need. Others were less optimistic. A recently completed survey of departments of obstetrics and gynecology indicates that most are already overextended and are unable to assume the expanded program and training efforts they recognize as their responsibility.

The obstetrics and gynecology departments are seriously handicapped by lack of funds. Support for professional chairs is difficult to obtain. There is a great need for more fellowships, stipends more realistically related to the costs of living, more liberal loan resources, and improved living conditions for residents.

Pediatrics is facing many similar problems. The number of pediatricians in the United States has increased four-fold during the past 10 to 15 years. Yet the physician-child ratio has dropped very sharply and will continue to do so unless vigorous measures are taken to reverse the trend. Since it takes a minimum of seven years of professional training, and more realistically 10 or 12 years, from the time a student enters training until he is a fully competent, fully practicing professional, the corrective measures we initiate now will not have their full impact until approximately 1975 or 1980. The longer we postpone realistic action to increase manpower resources, the more difficult it will be to catch up the backlog of unmet needs. For example, we are still seeing the results of lack of adequate preventive health services. A large number of children are entering school with hearing defects simply because, when they were younger, no physicians adequately trained to make a primary differential diagnosis between a simple earache and otitis media were available to them. We must develop methods of finding these problems earlier and correcting them earlier.

There are not nearly enough pediatricians to supply even current needs, much less to staff expanded programs. The percentage of pediatricians who enter private practice has dropped 30 per cent within the past few years, because private pediatric practice is done on a "piece work" basis and must rely on volume to provide a desirable level of income. This means long, hectic hours of hard work, which makes private pediatrics less attractive to young physicians than specialties in which hours are shorter and income is higher.

Even if more students could be encouraged to elect pediatrics as a field of specialization, many departments lack the capacity to train greatly increased numbers of students. A complete inventory of all pediatric departments in the United States has recently been completed by the Association of Medical School Pediatric Department Chairmen under the direction of Dr. Ralph Wedgewood while he was Chairman of that Association. The inventory covers funding, faculty, teaching and clinical resources, and the aspirations and capabilities of each department. Preliminary analysis of the data indicates that many departments lack sufficient funds and faculty to adequately meet even their present teaching responsibilities. Of the 87 departments inventoried, two had no full-time faculty and others had very limited numbers of full-time faculty. Budgets for education were low, with more than 25 of the schools having less than $50,000 annually available for this purpose. These funds come from the medical schools, research allotments, and in some cases allotments for health care services. A longer and more complete inventory is planned, and the pediatric departments are enthusiastic about this opportunity for analysis of their needs.

A joint council of the pediatric groups has been formed to discuss problems of mutual concern and provide some guidelines to federal and other funding agencies about service needs and ways to meet them. It is felt that many existing fund sources lack the flexibility to permit major innovations. Grants tend to be service oriented. More emphasis is needed on the support of research and education.

The problem of unfilled faculty positions in obstetrical and pediatric departments is a circular one. A very high percentage of the available federal support goes to a limited number of the better schools, leaving the schools with the least adequate programs and severest staff shortages without funding resources. This means they can offer only low level salaries, which in turn means that faculty members must supplement their incomes by private practice, thus diminishing the time they can give to teaching, research, or developing innovative programs in the medical schools and in the community.

Most medical schools rely heavily on volunteer faculty members, but this system has outlived its usefulness. Since these physician-volunteers receive no recompense other than the right to add the title of clinical professor to their list of qualifications, it is difficult for them to maintain a high level of motivation in the teaching, consultative and service duties they assume. Often they are forced to sandwich both teaching and their own continued education into the heavy service load on which their livelihood depends. We need to face the fact that these men cannot afford, and should not be expected to give their time on a volunteer basis.

There seems little doubt that the nursing shortage is a real one numerically. From 1956 to 1965, the number of nursing schools increased only from 1,115 to 1,153. Of these, about 700 are accredited and 450 are not. Only 11 schools had enrollments of more than 400 students, and 527 schools had fewer than 100 students. Some hospitals are operating with only one nurse for each 40 patients. To fill the manpower gap, many hospitals have developed training programs of their own. Some are excellent, but the quality is uneven. Eventually these hospital-centered schools should be replaced by full-fledged schools of nursing, but chaos would result if they go out of business before adequate substitute training facilities are available.

One of the greatest needs in the nursing field is better funding for specialty training. Currently there are only 20 programs in the entire country which offer specialty training in maternal and child care, and faculty shortages are formidable. Nurses trained in these specialties are being added to the manpower pool at the rate of only about 200 per year.

Part of the problem is the difficulty of attracting nurses into these specialties as they are now organized, because the sad fact is that they are deadly dull. Mothers come into the hospital one day and go home the next, and the nurse has no opportunity to derive any fulfillment from the establishment of personal relationships. It is rather like reading the middle of a novel from which the beginning and the end have been cut off. In our drive for greater efficiency, we are losing the personal touch in nursing. The nurse is expected to do something, check it off the list, and not worry about the results. But nurses do not want fractions of responsibilities and fractions of people. They want to know their patients as total people.

Part of the fault lies with the schools of nursing, which tend to regard obstetrics as so routine that insufficient time is devoted to this phase of training. There is little awareness of obstetrical nursing as a specialized area that requires a great deal of knowledge, skill, and human sensitivity. As a result the nurses move on into more satisfying or more lucrative fields, often with less grueling schedules.

The residential care of retarded children is another example of an area where manpower shortages are due in part to the difficulty of attracting intelligent, well-trained nurses. There has been a chronic turnover of nurses in these institutions. When one begins to analyze the reasons, it is easy to see that the assembly line basis on which institutions so often function offers no continuity of contact between nurse and child. The emotional needs of the child are not met and the achievement needs of the professionals are not met.

No single discipline can solve the problems of health manpower shortages. It will not help if medicine simply looks to nursing to prepare people to substitute for doctors, or if nursing expects medicine to take on the job of training ancillary personnel to fill the gaps in the nursing ranks. Medicine, nursing, welfare, and other disciplines need to work together to define and train the many types of personnel that are needed for adequate patient care at the same time they are accelerating training within their own disciplines.

Redistribution of Manpower and Services

It is time that we stop excusing our failure to solve the manpower problem on the basis of the magnitude of the problem or the lack of funds, participants said. Some noted that there may or may not be a genuine health manpower shortage, but whether there is or not is not the key issue. The real issue is that we are not making the best use of the resources we already have.

Health care is really an aspect of social policy, and we have not as yet developed a firm national policy of assuring optimal health care for all children and their families. Indeed, in this country we often seem to be allergic to having avowed social policies. The one policy we have is not to have a policy. This enables us to avoid overwhelming mistakes, but it also means that we inch along making a lot of little mistakes. We fall into the characteristic American dream of plenty. We think that if there are people who are not getting enough of something, we will just produce more and somehow it will automatically overflow to them. This is not realistic. Concentrating simply on producing more of everything will only bring us to the point of diminishing returns.

We need to look at all the different elements of the problem. We must think about environmental health as well as personal health. We need to determine whether we have too few physicians or too few nurses, or the wrong people are going for care, or the right people are going but are getting inadequate care. We have a whole jumble of ideas, each with apparent validity, but we need to evaluate them and establish priorities. The solutions we seek will be determined by these priorities.

It may be that the single action this country could take which would do the most to assure optimal health would be to legislate and implement a program of family allowances and income maintenance, participants said. That could well have a much greater impact than tripling the number of pediatricians over the next 25 years.

On the other hand, redistribution of the resources we have may be what is really needed most of all to solve the health manpower crisis we think exists. The time may come when we have to ration services. But we need to do this on the basis of sound judgments about the best uses of the available resources.

If we are to make optimal health a reality, we need to focus first on service needs; second on the distribution and redistribution of the services and manpower we have; and then on what needs to be done about additional manpower, recognizing that this is but one part of meeting the additional service needs.

Functions of Members of the Health Care Team

The conference participants made many attempts to define the functions of various members of the health care team and found this an extremely difficult assignment. The results were far from definitive; they must, in fact, be considered primarily springboards for further efforts at clarification.

One problem was that "function" was frequently confused with "role" or "image". It is far easier to generalize in idealistic terms of the prototype of the "good doctor" or the "good nurse" than to say specifically, "This practitioner should perform these exact duties." Another problem, as has been pointed out earlier, was the difficulty of defining what constitutes optimal health care. If you are not sure of your goal, it is difficult to know what you need to do to reach it.

It was difficult to define what medical members of the team should do, and nearly impossible to define the functions of other professional disciplines. What interdisciplinary collaboration has existed up to this point has been primarily in research rather than in service relationships, as for example, when psychologists or anthropologists have undertaken research in outpatient clinics. In this case medical service and research are more likely to exist side by side, even when they involve the same patients, than to form an integral unit concerned with health care. This is true to some extent even in relation to social work. The hospital social worker may be theoretically a member of the health team, but in actual fact she tends to be called in on a service-oriented basis when the medical professionals discover that the patient has a non-medical problem that needs attention.

These are useful contributions, but are there not even more useful functions than these for non-medical professional members of the health team? Are there special skills of each discipline that can be directly applied in the patient's care which will enhance his chances of achieving optimal health? If so, how can they be applied without cutting the patient up in little pieces like a jigsaw puzzle to be reassembled jointly by physician, nurse, nutritionist, social worker, child development specialist and others?

What functions each member of the health care team performs, of course, depends upon the nature of the program. The personnel and leadership will differ from time to time and place to place, depending on local needs and whether the program is primarily medical in focus or is of a more comprehensive nature. In medically-oriented programs, the type of personnel required and the functions they perform will also be affected by whether the emphasis is on acute or chronic illness. In the usual hospital clinic or community health center, a high percentage of cases are primary contacts with children suffering from the traditional range of childhood illnesses such as sudden fevers and respiratory infections. In the chronic care clinic centered around handicapping conditions, heart disease, or metabolic disorders like cystic fibrosis, the staff team may be supplemented by private pediatricians concerned either with particular patients or with research and treatment in relation to particular disease entities.

Even though the professional members of the team should work as co-equal colleagues, in realistic terms, every team must have a captain if it is to function effectively. In a program which is mainly medical in emphasis, a physician will usually serve in this capacity, carrying responsibility for each patient, even though care may actually be provided by other professional and non-professional personnel working under supervision. In more comprehensive programs where the term "health" is used to encompass all aspects of physical and psychosocial wellbeing, members of other disciplines may far outnumber the physicians in the team, and team leadership may be the responsibility of some other discipline.

In comprehensive programs, the team may often expand beyond the traditional core group of physicians, nurses and social workers to include dentists, lawyers, psychologists, child development specialists, physiotherapists, nutritionists, sociologists, home economists, anthropologists, educators, lawyers, and even economists. In addition, there will be a wide range of possible ancillary personnel, some with a primary identification with a particular discipline and others identified with the overall functions of the team. Although all of the conference groups discussed the use of auxiliary personnel extensively, no explicit definitions of function emerged, perhaps in part because so many types are needed that they defy description.

Even though unable to define the exact functions of various members of the health care team clearly, participants stressed repeatedly that interdisciplinary collaboration is assuming a new level of importance as science becomes increasingly aware of the need to view the patient and his problems within the context of his total life environment. They explored the nature of this collaboration in some detail.

Medical Professionals

Even though the participants' discussions of medical professional members of the team centered more around the changing roles of physicians and nurses than around actual functions, many of the comments added considerable depth to the total exploration of problems surrounding optimal health care. The relationships of physicians and nurses with their patients have changed and are still changing, in some ways for the better and in some ways for the worse.

The most important change in the physician's relationship to patients has grown out of the shift away from a sole emphasis on treating pathology to an emphasis which includes the prevention of pathology. With this broader responsibility, the physician is now asking what is his obligation to society? He can no longer, for example, confine his thinking about obstetrical care to the successful delivery of a pregnant woman. What is his role in relation to the illegitimately pregnant girl who will be dropped from school when her pregnancy becomes known? What is his responsibility for sex education in the community?

Another factor in the changing role of the physician is the shift in emphasis in obstetrical and gynecological care. The gynecologist used to be concerned primarily with removal of the uterus. Now the obstetrician/gynecologist is aware of responsibilities in periodic health examinations, cancer detection, family health advisory services. He is rapidly becoming the primary physician for a great number of women. He no longer gives a woman care for six to nine months; often he supervises her health care over many years and is called upon to take on her daughter's care as the girl reaches maturity.

The relationship which develops between obstetrician and patient is an intensely personal one. The delivery of a baby or a gynecological examination is an experience which neither the physician nor the patient can share easily with others. A positive transference develops which makes it doubly necessary for the obstetrician to spend a large percentage of his time talking with the mother. This is far more time consuming than the time spent in taking the blood pressure or palpating the abdomen.

Will the physician be willing to accept changes in the close one-to-one relationship with the patient, and share his responsibilities with other members of a medical team? Will he encourage the public to accept this change, or will he want to hold onto this part of his role? Part of the answer to these questions lies in the location of the medical services. In areas where there is no shortage of medical manpower and patients can afford to pay for whatever kind of care they prefer, there may be reluctance to change. In areas where physicians are rushed and overworked, services are inadequate to meet the needs of the population, and the costs of traditional medical care are prohibitive, both physicians and patients may accept the change with relief.

To judge from discussions which swept across all of the conferences, nurses are not particularly happy about the way their role has changed in the past thirty years or so. They spoke with great feeling of their desire to turn away from "nursing doors and hallways and charts and charge accounts and pharmacies" and get back to nursing patients. Nursing has been on the wrong track for a long time, they said -- from the time it got tied up in hospital administration instead of staying with its clinical nursing functions. With the strangely competitive standards of our society, it is difficult to convince a good many physicians, hospital administrators, and nursing educators that the concern of nurses is and should be the care of patients. What nurses are trying to do is to make a science of the art of compassion.

This involves developing opportunities for nurses to use their talents more creatively than they have been allowed to do in the past. They know that they have unique contributions to make in obstetrics, in pediatrics, in community health, and they want free enough conditions in the medical institutions to enable them to make maximum contributions. This is happening in some places. A hospital in Atlanta has set up a system under which a nurse with public health training has complete freedom of movement. She can work any place in the hospital, including the maternity and antepartum clinic. She can telephone the patient or visit her at home, and she will answer the telephone on a 24 hour basis if the patient wants to call about a problem.

There are other functions in which nurses need to become more heavily involved to meet new health care needs. They need to move into complete family service, including parent education. They are going to have to teach many disciplines, in addition to their own, and supervise various types of non-professional personnel. They need to play a more active role in preventive care. There should be competent pediatric nurses in the schools operating programs of preventive care. There should be competent maternity nurses working collaboratively with physicians in the areas of preconceptional advice, family planning, and prenatal care.

When it came to questions of nurses doing actual diagnosis and treatment, conference participants expressed widely diverse reactions. However, these did not split along disciplinary lines in the ways that might have been expected. Many of the physicians seemed more amenable to the idea of nurses performing such functions than the nurses were.

Many nurses have taken on responsibilities like this for years, some of the physicians said. Why do we have to keep talking about it as if it were controversial? It is not always possible to separate preventive care from curative and therapeutic care. We can't move every medical problem into a medical care center or hospital or we will swamp the facilities, but somebody has to take care of the problems. Nurses are perfectly competent to make some diagnostic assessments and therapeutic decisions, and they do it all the time. For example, a nurse in the premature unit notices that Baby Jones' temperature has gone up. She checks the temperature of the incubator and finds it too high. She adjusts it, but the baby's temperature remains up, so she asks the pediatrician to have a look. She has made a diagnosis and initiated therapy and carried through to appropriate action for the benefit of the patient. Both the public and the health professions tend to exaggerate and over-emphasize the precision required to make a diagnosis and provide therapy, and the level of knowledge necessary to carry out these functions.

Public health nurses work with families in many ways from the period of conception through the maternity cycle, the preschool and school years. Nurses who work in remote areas where there are few physicians routinely listen to chests and look into ears. They make preliminary diagnoses and they refer patients who need further care to physicians. Sometimes the nurse's diagnosis is right and sometimes it is wrong, but if it is not right it is usually pretty close. The doctors accept the referral, make a better diagnosis if they can, initiate treatment and send the patients back to the nurse with the message, "You have done a good job. Go ahead with the treatment and send us the next patient when you are ready."

If these nurses can do it, there is obviously no reason why nurses should not also assume much broader responsibilities in comprehensive health care programs in urban areas than they have done in the past. They can be trusted to recognize the upper limits of their own knowledge and skills and the kinds of problems they need to refer to physicians.

Medical care should, in fact, be a joint decision-making process. The nurse is often in a position to recognize problems the physician or the hospital administrator has overlooked. There would be greater harmony among the medical professionals and better service to patients if physicians would say to nurses, "Now from our standpoint, this mother and child are ready to go home. Let us know when you think they are ready." Or the nurse may recognize that a streamlining procedure which makes sense from an administrative standpoint does not make sense in human terms. One nurse, for example, realized that a new requirement to remove pediatric diets to the main diet kitchen of her hospital deprived unhappy young patients of a comforting sense of individuality -- of having something of their own in an alien setting.

Discussions on the development of specialty fields like obstetrical/gynecological nursing were lively. Both physicians and nurses clearly felt the nurses had a contribution to make, but the nurses wanted it understood that they had no intention of being pressed into service as substitute doctors to do leftover tasks the physicians don't want to do.

It was generally agreed that nurses could easily handle most aspects of prenatal care. Similarly, there is no reason why gynecological nurses could not handle screening procedures for venereal disease and routine pelvic examinations and screening for cancer of the cervix. They could easily distinguish between normal and abnormal pelvic conditions and refer the abnormal ones to physicians for further examination and treatment. Much more widespread early diagnosis of masses, inflammatory diseases, and other problems could be achieved through this expanded manpower usage. The nurse could also assume responsibility for many of the services provided in family planning clinics.

Some community hospitals have approved programs of this kind, but they face a double shortage. There is a lack of nurses trained to perform these functions, and there is a lack of academic people to train the nurses or to train physicians to direct such programs.

On the question of whether obstetrical nurse specialists should undertake deliveries, the general feeling seemed to be that this is largely a matter of 1) adequate training, and 2) gaining acceptance of the idea within the medical and nursing professions and with the public. Heavy emphasis has been given in this country to the idea that every baby should be delivered by a physician. Nurse-midwives have functioned primarily in rural areas. It will take time and explicit educational efforts to sell people on the idea that the use of obstetrical nurse specialists to deliver babies will not diminish the quality of care but may actually enhance it because patients will receive more individual time and attention than would otherwise be possible. This is not to say that every nurse should be expected to prepare herself to deliver babies; it merely means that this is a possible field of specialization for nurses who would find it challenging.

Non-Medical Professionals

Probably the greatest contribution that social work has to offer in the development of optimal health care services, participants said, is the application of certain approaches and techniques which this discipline has developed and refined to a high level of effectiveness. It is part of the job of social work to identify deficiencies in the social structure which may lead to social or individual pathology and find ways to bring about necessary changes before the pathology develops. This may mean developing welfare services aimed at the elimination of poverty, it may mean working preventively through the schools or programs like Head Start to help children overcome personal or environmental handicaps, or it may mean working with other disciplines in health services designed not merely to cure or prevent physical illness but to build health in the fullest developmental sense.

The social worker has worked primarily through three approaches: casework with individuals, group work, and community organization. Out of the first approach has developed one of the techniques which has proved extremely useful in other disciplines, the technique of eliciting information through interviews and working with the client on a one-to-one basis toward the solution of his problems.

The second technique, group work, was initially used primarily in relation to leisure time socialization and recreation. More recently its therapeutic potential with youth groups, parent groups, or groups united by a common problem like illegitimacy has given new impetus to the use of this technique.

However, it is perhaps in the application of the community organization skills of the social worker that the greatest changes have taken place in recent years. The ever-increasing need for united broad-scale efforts to overcome the socioeconomic problems of children and their families has generated greatly increased emphasis on this particular social work skill. The number of master's degree programs offering specialization in community organization has risen significantly in recent years.

This emphasis on community organization reflects certain basic differences in orientation between the medical and social work professions. The physician tends to regard the social matrix as constant and look at the problems of the individual within that matrix from a purely clinical viewpoint. The social worker looks at the social matrix as a key factor in the individual's problems and tries to see how the environment can be manipulated to improve matters. Because of his familiarity with the machinery of community action -- all of the boards and committees that must be dealt with in order to bring about social change -- the social worker has a particularly important role to play in establishing services for optimal health care.

What the participants said about behavioral scientists as members of the health care team centered around three major areas:

> What they can contribute in direct work with children and their parents in counseling and educational capacities;
>
> what they can contribute to assessment of the level of the patient's health;
>
> what they can contribute to research that will lead to greater effectiveness in health care services.

Discussion of these areas overlapped, and much of it is covered in the section on The Consumer. In relation to research, they made two points: the importance of applying what we already know about behavior, and the importance of asking questions about health care in new ways from an interdisciplinary perspective. The former point is covered in the section on The Consumer. The latter, which stressed the interdisciplinary team approach, is included here.

In relation to the assessment of the actual status of health, participants pointed out that the borderlines between pediatrics, neurology, and developmental psychology are often hazy. All of these disciplines use the same means of assessing what the total condition and behavior of the organism shows about whether the obstetrician has succeeded in bringing out a "good baby". For example, studies of the depressing effects of anesthesia or other medication during labor on the immediate post-delivery status of the baby draw on evidence of sensory and perceptual capacity, i.e., how quickly the baby picks up sucking behavior, and other behavioral measures. Questions are also being raised about possible retarding effects of the six or seven weeks of sensory deprivation that is standard procedure in the care of premature infants. Here we have a concrete question of how to provide the special medical protections that premature infants need without retarding their behavioral development.

In research, members of each discipline can help others identify factors they have overlooked which affect the outcomes of a situation. Biologists, for example, may say to psychologists, "Look, you guys are going straight to your super-reductionist statistical manipulation without going through a careful description of the evolution of something. You make conclusions about behavior and learning curves of rats in a maze without considering that a rat in captivity has a different physiological and endocrine response than a rat in his normal enviornment in a nest in the barn or someplace. If physiological and endocrine responses affect behavior, how can you ignore this and go on believing in your nice curves that you get from your learning experiments?"

It is easy to overlook factors of this kind. It was a long time before someone realized that sacrificing rats that are poor maze runners means study findings will be distorted by the fact that those who are left are genetically screened to have a certain kind of capability and perform a particular function, and that their behavior is therefore not typical.

The behavioral scientist can help to identify unintended consequences of treatment which can lead to social or personal pathology.

For example, he can bring useful perspective to analysis of factors that affect the consumer's ability to make use of advice he receives from his physician. Recently an obstetrician, a psychiatrist, a nurse, a psychologist, a biologist, and an anthropologist worked together on a study of mothering behavior. Their basic question was how one develops and expresses patterns of parenthood. They filmed four sequences:

> The neuromuscular patterns of the mother's response to her first contact with the infant;
>
> her non-verbal behavior during the first feeding experience;
>
> her responses to the first demonstration of how to bathe and care for the baby;
>
> a home visit six months later.

Analysis of these films raised some interesting questions. Mothers who had been quite relaxed with their infants when functioning on the basis of instinctual mothering drives sometimes became tense and developed rigid motor patterns after watching the nurse demonstrate care of the child. They became suddenly fearful, afraid that they would let the child's head drop or injure it in some way. The question then arises, what barriers do well-meant instructional efforts set up against communication between mother and infant? It has long been recognized that babies react to tension in their mothers with tension of their own and that this sometimes leads to physical problems like colic. How can physicians and nurses and others responsible for instruction of mothers in child care get the necessary information across in ways that will reinforce the mother's natural strengths rather than undermine her confidence in herself?

Exploratory interdisciplinary research can contribute very directly to the improvement of health care services. In Florida, for example, an anthropologist was brought into a health research team and given access to the entire pregnant population of a county. Her only instructions were to see what sort of useful information she could bring in. She came back with a fantastic fund of information which is now being used as a basis for building a health care program that will meet the specific needs of the county.

Sometimes the difference in conceptual approach can lead one discipline to become impatient with another. One of the difficulties a behavioral scientist faces in doing research in a medical setting is that the service-oriented physician is accustomed to expecting definite answers within a clearly defined period of time. But the behavioral scientist has no way of knowing whether his research will pay off in three years or five years or ever, in any way that can be applied directly to medical problems. Furthermore, he is constantly aware that his research may be choked off before his work is completed, since most grants in the medical schools carry no assurance of tenure beyond the initial period of three years or so. This tends to limit his approach, making him focus on short range problems in which fairly speedy answers are probable.

Team members of other disciplines often fail to recognize the complexity either of the causes of behavior or of bringing about changes in behavior, and may become impatient if their expectation of receiving a single-cause answer and a simple solution to the problem they are facing is not fulfilled. Even common behavior problems can have multiple causes, and the causes may differ with different people.

People also expect a direct relationship between the presumed causes of behavior and the intervention technique, but such a relationship does not always exist. Many different behaviors generated by many different causes may be changed by the same technique, and more than one technique may be effective in changing a particular behavior. Researchers sometimes fall into the trap of forgetting, or having colleagues of other disciplines forget, that there are more causes and more intervention techniques than just the ones they happen to be focused on in a particular study.

The behavioral scientist is further handicapped in the medical setting by his partial knowledge of the patient. He is often concentrating on an aspect of the patient which is secondary to the principal field of concern of the hospital, and his investigation may be looked upon as annoying or trivial. He is, in a sense, in the position of studying the smile on the face of the cat while leaving the body to others.

However, this is less of a problem than it was in the past because the behavioral scientist has a more specific "product" to offer than he had in the past. He is able to work in the health setting from a set of clearly defined principles which have been developed over the years in the research laboratory. He is therefore being drawn more actively into such problems as how to bring about specific behavioral changes. The question of how to get a poverty level mother to recognize the importance of coming in for help before she is brought in, in shock, after three or four days of hemorrhaging is much more than just a medical problem. The behavioral scientist is therefore being asked to help instill constructive attitudes toward pregnancy and childbirth, to get specific types of information across to patients, and to find ways of motivating patients to seek medical help before their problems reach crisis proportions.

Other Members of the Team

It is perhaps indicative of the confusion surrounding the use of auxiliary personnel that the efforts of conference participants to deliniate functions often shifted to discussion of standards of qualification or bogged down in semantics. Since the people under discussion ranged from housekeeping personnel trained to do emergency aspiration of tracheotomy tubes to highly trained "medical associates" to whom is delegated the performance of complex medical procedures, no satisfactory terminology could be developed to cover all of them. "Non-physician health personnel" was used by one participant to mean personnel trained for specific technical or child care duties -- but, are not nurses, psychologists and social workers also "non-physician personnel"?

The distinction between "professional" and "sub-professional" or "non-professional" is equally sticky. Every discipline has a strong tendency to refer to itself as "the Profession" and to exclude people of different but equally impressive backgrounds from colleague status. But even within disciplines the distinctions are sometimes peculiar. A caseworker with 25 years of experience but no social work degree, for example, is still a "non-professional" in the lingo of the discipline. The practical nurse or the nurse-midwife -- each fully trained in her own specialty -- is apt to be regarded as "non-professional" by the hospital-affiliated RN, even if her own training has been no more prolonged or extensive.

"Sub-professional" carries an inescapable implication of inferiority which makes it an unsuitable designation for personnel trained to a high level of skill, and "technician" has some of the same overtones. A great variety of other terms was used during the conferences: "allied health personnel", "auxiliary personnel", "ancillary personnel", "paramedical personnel", "medical corpsmen", "medical activators", to name only a few. None of the terms received universal endorsement. The term "physician assistant", for example, used by some participants as a high-status title for particularly highly qualified nurses, was rejected by most of the nurses and some of the physicians as carrying an implication of "aide" status. There should be no implication that nurses are, or want to be, junior grade doctors, the participants said. What they want is colleague status with members of other professions, and designations which stress their individual professional status as nurses. Terms like "clinical specialist in nursing and obstetrics" and "obstetrical nurse professional" were proposed as alternatives.

Here again it quickly became apparent that not all participants understood the meaning of the various proposed titles the same way. Again and again nurses urged that "health multipliers" -- another nebulous term that was used repeatedly -- not be recruited from the already sparse ranks of nursing. What type of training, then, is implied by a term like "physician assistant" or "medical associate"? Is the training something superimposed on top of other professional training? Or is it something that starts after undergraduate training or even, as nursing education itself sometimes does, immediately after high school graduation?

In order to develop effective models of team care, we must approach the problem of the use of auxiliary personnel from a fresh viewpoint, not just create more and more new jobs to patch up existing systems and preserve professional integrity. The more we proliferate types of personnel, the more difficult the task of developing a truly coordinated pattern of services becomes. As a constructive starting point, we need to consider the way that knowledge filters from one discipline to another. One starts, say, with a basic scientist, a Ph.D. in some field. Through his research he identifies certain basic concepts and and principles that are applicable to medicine. A physician -- say, perhaps, an obstetrician -- takes these concepts and reorders them, testing, modifying, and finally developing new medical techniques which can be applied in practice. From this clinical specialist, the technique spreads to other medical practitioners and becomes fairly universal knowledge. Eventually it becomes also a part of the practice of nursing, of social work, etc.

But technique alone is never enough. There is always a basic component of judgment involved, an intellectual process which leads to a design for implementing the technique once it has been described. Alternative courses of action have to be developed, and these require a high level of discriminatory predictive judgment: if we take this course of action, this will be the result; if we take that course, that will be the result. It requires a highly competent person to be able to determine which calculated risk he should take and which technique he should test and utilize at any given point in time.

Some tasks and activities, however, are based on a circumscribed and rather readily communicated body of knowledge. Once these procedures have been worked out by physicians and specialists, some of them can safely be delegated to others. It was stressed repeatedly that "90% or more" of the actual tasks of health care can just as well be performed by people without medical training; and that most diagnosis and therapy is, after all, done by laymen, primarily mothers and teachers. On the other hand, what about that tenth case that turns out to be not some simple childhood fever but meningitis? What about the routine delivery of an apparently healthy mother that suddenly turns into a nightmare of obstetrical complications?

Supervision is the answer, some participants said. But how much will the time pressure on a physician be relieved if he personally has to supervise every delivery and every medical examination? He might as well do them himself in the first place. True, in theory, he can oversee the work of several members of the team simultaneously. But what about the sheer volume of people to be served? What about the health care needs of people in remote areas where there is only one physician to cover several hundred square miles? Is it better to risk unsupervised medical care given by people without full medical training or to provide no care at all? We are going to have to make some compromises, but we need to be sure we make them on the basis of sound judgments.

One key factor in the successful use of team members with limited training is how much decision making is involved in each task. In one medical center, high school girls are being used to administer psychological tests, and they function very capably because they are required only to follow certain prescribed testing steps, feed the results into a computer, and go on to the next step. Similarly, aides can be trained very quickly to screen patients for vision and hearing defects. Technicians can be trained to monitor the mechanical functioning of respirator units for patients in intensive care, thus freeing the time of professional members of the team for duties requiring high levels of skill and judgment.

There are many possible ways that supportive personnel might be utilized in services surrounding the childbearing cycle. Properly trained, they might perform the following functions:

instruct patients in the physiological and psychological preparation for marriage and child bearing, including counseling of young girls;

instruct patients in family planning, including contraception and infertility;

provide preconceptional care, including assessment of risk for mother and child;

provide ante-partum care including obtaining history, performing physical examinations and laboratory tests, treating disease, giving dietary advice, giving counsel and support;

follow patients in labor;

assist with or actually accomplish delivery;

provide post-partum care including counsel on problem of adjustment to parenthood;

provide followup home care, including case finding.

The important distinction between tasks which can be performed safely and efficiently by personnel working under a minimum degree of supervision and those which require close supervision must always be remembered. Tasks which are highly individualized and require on-the-spot adaptation of scientific principles and reordering of knowledge require supervision if potential safety hazards are to be avoided and therapeutic effectiveness is to be assured. This is difficult to achieve in uncontrolled situations such as home visits. Team members may encounter problems which must be dealt with promptly for the benefit of the patient and which they could perform very effectively under supervision but which, ideally, they should not be encouraged to handle entirely on their own. We need to find mechanisms for safeguarding the quality of care provided by supportive personnel in a variety of situations.

Interdisciplinary Collaboration

Throughout the conferences there was much emphasis on the need for medicine and other disciplines to set aside emotionalism and protective pride in their individual identities and look together at the nature and quality of medical services that need to be provided. We cannot really perform a service to children and their families if we insist on preserving the vested interests of individual disciplines, participants said. We need to stop looking at ourselves and start looking at the patients' needs.

We seem to have been going through a kind of period of grief and mourning that our traditional disciplines are having to give up pieces of their domains. Each discipline has been jealously guarding its own role and has shown great resistance to accepting anyone who oversteps the boundaries and intrudes upon roles that members of various disciplines have come to see as their individual provinces. This suggests that we need to devote the most intensive scrutiny to selection of team members who will have the necessary flexibility to adapt to a new kind of interdisciplinary working relationship.

There is a danger of professional obsolescence if we continue to cling nostalgically to the role definitions of the past. Lack of social sophistication and awareness can be a serious impediment to improvement of health care services. For example, a surgeon exclusively concerned with curative and restorative efforts may be more than willing to delegate the care of the patient to others. This is not necessarily bad; there must, of course, be clinical specialization. Individual disciplines retain separate identities and unique skills just as members of a family do. But if we are to set suitable priorities in health services to meet today's needs, we need to consider the whole of care and redefine disciplinary roles not only in terms of the unique contribution of each but also in terms of how they complement each other.

If the service-oriented professions are to see their functions as members of the health team in broader terms, they need concrete help in understanding the value systems of families of different socioeconomic levels; in understanding the dynamics of change; in understanding social research techniques and ways of communicating with those in need of services. A tremendous body of behavioral and social knowledge has been accumulated which is not being utilized because it has not been made available to service-oriented disciplines in simple language that can be uniformly interpreted. Many of the real advances in science are coming not from the core knowledge of a single discipline but from the interaction of disciplines.

There is constant role blurring, within occupational groups as well as between different professional groups in comparable fields. For example, a recent analysis of role definitions described by psychiatrists, psychologists, psychiatric nurses, psychiatric social workers, and counsellors in psychiatry showed that, with minor variations in wording, the definitions were all pretty much the same. In actual fact, the patient, the problems and the skill of the individual therapist all determine the course of therapy more than the particular professional label the therapist happens to bear.

At times members of different disciplines may have more in common than members of different branches of the same discipline. Pediatricians and caseworkers sometimes have more in common than pediatricians have with other physicians. Child welfare workers may have more in common with developmental psychologists than with public welfare workers. We are schizophrenic in the way we talk about the care of children, with health in one pocket and welfare in another. Health and welfare are indivisible.

Even though it is still an evolving relationship, interdisciplinary collaboration in the health care setting is reaching a new level which brings research and service closer to each other, participants said. In the past, physicians have been hesitant about letting anyone outside their own discipline "into the cathedral" to ask questions or propose solutions in relation to health problems. As the awareness has grown that health problems cannot be solved in isolation from economic and psychosocial considerations, the disciplines have begun to reach out to each other -- each bringing its own perspective, asking questions about the same issue in different ways, rocking each other off their bases of preconceived notions and thus learning what they can contribute to each other's knowledge and to the achievement of their mutual health goals.

Different disciplines bring different conceptual orientations to problems. The physician may be concerned with why a patient doesn't go to the doctor when he shows early symptoms of disease. The behavioral scientist may be interested in developing a model of the way people think about their own bodies, what information they look for, and what changes in their behavior these attitudes bring out. The social worker may be most heavily focused on the relationship between the patient's failure to seek care and the overwhelming socioeconomic problems he faces.

There has been a tendency, not yet fully overcome, for a physician to formulate a problem and then go to the behavioral or social scientist and say, "Here's my problem. What can you do about it?" What is needed is "an environment for mutual puzzlement." The members of the different disciplines, working from their respective viewpoints, need to immerse themselves in the general problem area and, as a result of long interaction and discussion, formulate questions which neither could formulate separately. This is quite different from one discipline saying to the other, "Give us proof that you have something to contribute and we will let you play on our team."

This attitude of joint exploration goes against the grain of the rigid departmentalization found in most universities today. Consequently, what too often happens is "quickie" consultations among peers or, alternatively, the situation in which a senior staff person brings in someone from another discipline on a very junior level. If the interdisciplinary team approach is to work, members of the team from different disciplines need to be fairly equal in levels of competence. Otherwise one discipline will quickly assume dominance over the others. The process of understanding each other's points of view is not a rapid one; it must build cumulatively over a period of years -- but if it is to build at all, a basic mutual respect for each other's capabilities must exist. It is essential that all members of the team be well qualified in their individual areas, or there will be the hazard that the work of the team will sink to the lowest common denominator.

There are limits to how much each individual can take on. The social psychologist, neurologist, or hematologist must focus on relatively specific problems if he is to function to capacity in making the unique contributions his discipline equips him to make. But the information he generates as he works on these specific problems in his own area of responsibility can often be useful in the total problem solving process.

This kind of progress can best be fostered by providing, in each health team, some member whose responsibility is to look at the family as a whole, to discover, for example, whether there is a relationship between the child's dermatitis and the fact that the father beats the mother. This "puller-together" may be a different member of the team at different times -- sometimes the physician, sometimes the nurse or the social worker or the psychologist. Or sometimes the team may be fortunate enough to have a member with a multidisciplinary background who can look at the problems from the "overview" perspective and serve as a link among all the disciplines represented in the team.

TRAINING FOR OPTIMAL HEALTH CARE

In every one of the five conferences of the series, one of the themes that emerged most strongly was that the traditional methods of training various members of the health care team are totally inadequate to meet today's health care needs. Members of each discipline are being called upon to fulfill new functions in new types of health care services. Physicians and nurses accustomed to working with children in the limited context of clinical medicine are finding that they can no longer divorce themselves from the psychosocial problems which affect the health of these children. Similarly, social workers accustomed to focusing on the solution of the immediate problems of individuals are discovering that such problems can often be alleviated only by attending to the broad range of economic, psychosocial and health needs of both the individual and the community in which he lives. Behavioral scientists who have been primarily interested in the processes and patterns of learning and behavior are recognizing that they can understand these phenomena fully only if they are also familiar with the biological and physiological bases which underlie them.

But how can training be expanded sufficiently to encompass the enormous amount of knowledge which should, theoretically, be part of the armamentarium of every professional person regardless of his discipline? Medical training particularly, but to some extent training in other disciplines as well, already suffers from severe over-stuffing, both in relation to the available time and in relation to the amount of knowledge students can absorb and retain. How do we move away from the overspecialization which has made us splinter people beset by a variety of problems into unrealistic bits and pieces, without training students to be jacks-of-all-trades and masters-of-none? The question of what training each professional discipline should receive was one with which the conference groups wrestled with varying degrees of success. There was also much discussion of how allied health personnel can best be trained as fully contributing members of the health care team.

The second major training issue which concerned the participants was how members of all the disciplines concerned with health care can be given training which is directly pertinent to the problems they will face when they enter practice. Too often, training fails to encompass the fruits of recent research or provide an adequate base of knowledge of the health care systems in which the health professional will work. Nor do the cloistered halls of Academe give students a true grasp of the grimy realities of health care in an urbanized society with its extremes of poverty, overcrowding, and desolation. Some of the ways in which this problem is being attacked head on, under the leadership of the students themselves, were described.

Problems in Designing Effective Training

In order to get at the specifics of the problems of training, participants in one of the meetings attempted to look at them within the conceptual framework of matching manpower to health care jobs. Training has to be categorical; people have to be trained for specific jobs. Yet training for optimal health care is loosely organized at the present time. Insufficient attention has been given to the definition of specific job skills and the kinds of training each requires.

It was suggested that health care jobs need to be "scaled" in terms of the level of skill needed to perform them and the trainability of the people available. In the potential manpower pool, there are many more people with low ability levels than with high ability levels. Training will reach its greatest level of efficiency if people are trained for the level of skill for which they are best suited. Those with a high level of trainability could qualify for a wide range of jobs, while the range of possible jobs for which less capable people could be trained would be much more limited. Each category of trainees would, however, "fan out" so that there would be some overlapping of training for the different skill levels, with some "top" people being trained initially for less than top level jobs and some relatively limited people being trained upward toward the middle level of skill.

Training must consider all the skills required for each job category. Here again there will be overlapping; several categories of personnel may need to learn some of the same skills as well as specific skills unique to their individual job descriptions. In "scaling" jobs in this fashion, however, it is important to avoid overly rigid categorization. People will resent any implication that they are "grade 2 doctors" or "grade 2 nurses" or "grade 2" anything else. Each job must have a respectable identity of its own. Within this identity, there must be opportunities for upward mobility on the job scale as the capabilities of individual workers are increased by continued training. It is also important, in training, to recognize that certain job categories requiring different levels of skill are required within each discipline as well as within the total framework of health care jobs.

High or low quality performance can occur in any job category, whether it is a physician, a nurse, a social worker, or a technical assistant of some sort -- and quality of performance rests both on individual capability and on the adequacy of training. What must be avoided is any implication that performance on jobs requiring less training and skill is automatically inferior in quality to that on jobs requiring a high level of training, and that the people who fill the less skilled jobs are therefore inferior.

Training the Various Members of the Health Care Team

If program and services are to be devised which will assure optimal health care in its broadest sense, it is essential to look beyond the discipline-limited way of thinking about training. Curriculum changes are essential at both the undergraduate and graduate levels, in the universities as well as the medical schools. Students training for careers in many disciplines -- political science, economics, journalism, teaching, social work and numerous others -- should receive, at the undergraduate level, training relating to the psychological and socioeconomic impact of child-bearing, genetic and sex education, family planning, abortions and population dynamics.

Yet if interdisciplinary collaboration in health services programs is to be effective, the core of unique knowledge and skills needed by each member of the team must also be considered. It is obvious that sizeable faculty increases will be required but effective training cannot be assured only through increased numbers of teaching staff. New types of training will be needed. Participants in one of the conference groups suggested that a number of universities undertake different segments of a coordinated series of experimental training programs. The same protocols and standard measurements should be used in each to assure comparability. These programs should be flexible in structure, cutting across many university departments as is now possible in relation to the new university-affiliated mental retardation centers.

Information about the model developed from a comparative analysis and evaluation of the correlated experimental projects should be conveyed widely and promptly around the country. Even though each region, state or city has its own set of problems, certain aspects of the training programs would have broad applicability. Adequate funding would of course be necessary to enable the universities to undertake such programs.

Training Physicians

Both the quantity and quality of physician training need to be increased. It is absurd to talk of expanding services if there are not going to be well-trained physicians to man them. Departments of obstetrics and gynecology, and departments of pediatrics need to refocus their programs now, breaking away from the traditions that bind them, if they are to meet the medical care needs of the coming decades.

The basic aim of medical education is to teach the student how to solve medical problems. He comes to medical school to learn how to be a doctor and take care of people. To do this, he has to have a basic core of medical knowledge without which the most sophisticated program of health services in the world cannot succeed.

This basic knowledge must extend beyond his own specialty. Every physician needs to understand the interrelationship of obstetrical problems to other medical conditions. For example, all physicians who have any responsibility in relation to a woman with a severe cardiac involvement--whether they are obstetricians, cardiologists, or pediatricians--need to know all the physical ramifications of pregnancy. They need to know how pregnancy will affect the heart condition, how the heart condition will affect the mother's ability to withstand the stresses of pregnancy, and what effect it will have on the prenatal development of the child. Among other things, this means that residents in these fields should have ample access to obstetrical patients during their training and should have repeated opportunities to perform actual deliveries. It is possible to learn only so much by observation. If a physician is to be ready for the routine and emergency situations he will encounter in practice, he must have had opportunity to assume increasing levels of responsibility for patient care during his residency.

In the obstetrical field, an educational council has been formed to upgrade the quality of residency education, make it more responsive to changing patterns of care, and give more emphasis to specific needs such as better community obstetrical care programs. It is recognized that patterns of care will not change automatically. If the transition is to be achieved successfully, changing concepts like the trends toward group practice and the use of medical care teams must be incorporated into training.

Departments of pediatrics are equally concerned with these interrelating problems of training and services. Department chairmen are looking at the problems primarily from the viewpoint of how one can tool up the educational process to increase and diversify the product--in this case, well trained pediatric manpower. Most sessions of the annual professional meetings of recent years have, in fact, been devoted to this question, and a series of resolutions was formulated two years ago. The departments of pediatrics recognize that it is not enough to expand the education of existing types of health personnel. There also needs to be a reexamination of organizational patterns for the delivery of health care services, and the development of innovative types of service and new types of health personnel to provide some of these services.

The changing role of the physician discussed earlier also requires that the medical student must have opportunity for training which includes elements from many disciplines. He must absorb a working knowledge of the behavioral, social and economic problems already discussed, since it is the physician who must most often deal with them on an individual basis. He also needs specific training and experience in how to function in a variety of administrative structures, as increased emphasis is placed on community health programs to meet the health needs of mothers and children.

To meet this training need, many medical schools are attempting to integrate their training programs more closely with community health programs. One school has appointed an Associate Dean to devote full time to developing systematized, coordinated health programs utilizing all health facilities and community hospitals in the county. The school's department of obstetrics and gynecology encourages its obstetrical residents to serve one year of their four-year training program in a public health program, and to continue through a fifth year to obtain their masters' degrees in public health. One young physician who wants to specialize in maternal and child health programs in Southeast Asia or Latin America has received her MPH, has had a year and a half of psychiatry, an internship in pediatrics, and is currently serving an internship in obstetrics.

Unfortunately, the viewpoint of many professional groups is so narrow that people who elect training programs of this type instead of Broad certification in a particular specialty run the risk of being accused of being dilettantes. We should get our focus off artificial criteria and consider the spectrum of services we need to develop and the spectrum of people we need to provide to make them function; but the harsh reality is that people with degrees and certifications in specific specialities can command higher salaries than those with special training of some sort but no degree to show for it. It may eventually become necessary to create a certifying Board of Maternal and Child Health to provide the "status" our certificate-conscious society requires.

Training Nurses

Like all the medical fields, nursing is seriously affected by the knowledge explosion. Nurses have an enormous amount to learn, but the quality of training available leaves much to be desired. More than three-fourths of all practicing nurses in this country have been prepared in diploma programs in small, poorly staffed community hospitals that provide a very meager scientific base, a participant said. Often the graduates are prepared as little more than technicians. The situation is even worse at the advanced degree level. Only two and three-tenths per cent of all nurses in the country have preparation in a specialty field.

However, progress is being made. There are now graduate programs in maternity and pediatric nursing at the master's level which provide sound scientific bases of knowledge for management of patients. The nurses thus trained are knowledgeable about both the biological and the psychological bases of practices, and they know enough to know what they don't know and what should be turned over to a physician. Management of the normal prenatal patient, for example, is an appropriate function of the well prepared nurse.

It is important for training to be keyed in with service programs because services provide the laboratories in which nurses learn how to manage the problems of patients. Because students have so many requirements to fulfill, it is difficult for them to obtain as much experience in direct patient care as might be desirable. Schools of nursing do what they can to overcome this gap by assigning regular caseloads of three to five families to students in many degree programs. In some schools, most students are assigned families with chronically ill children, and the nurses work with the same families throughout their two years of training. The nurses confer with the attending physicians, the social worker, the public health nurse or any other disciplines involved in the particular case, and together they work out a plan of service. The student makes home visits and sees the families whenever they visit the clinic. In at least one school, nurses training for degrees in obstetrical nursing carry twenty hours per week of direct patient care, and they work with the same patients all the way through ante-partum care, labor, delivery and post-partum care. In some cases this carries over into pediatric care with the same patients. This experience in working in depth with a few families helps to foster a high quality of care, even though it is not entirely realistic preparation in terms of quantity.

In many of the schools there has been an unfortunate dichotomy between the faculties and the hospital nursing staffs, with faculty members rarely participating in bedside care. This has deprived students of role models oriented toward patient care. This is now being corrected to some extent by a trend toward joint appointments of nurse educators to the schools of nursing and the hospitals. This arrangement provides better continuity of training for direct patient care.

Speaking for herself and her colleague, Dr. Henry Silver of the University of Colorado Medical Center, Dr. Loretta Ford described the special one-semester training program for nurses which was begun there two years ago. Herself a nurse, Dr. Ford shared Dr. Silver's feeling that many nurses had latent skills which were not being fully utilized in community child health care programs or in the offices of pediatricians. For example, many nurses knew a great deal about growth and development but had not been able to incorporate it well into practice. Because of the rigidities and prejudices in the health care system, and because the nurses themselves lacked confidence, their rather wide variety of skills was not being fully integrated into the system. The intent of the Denver program is not to create some off-breed kind of specialist but to make better use of nurse-power possible.

The program has two phases: (1) preparation of the professional nurse for child care; (2) actual practice of this role. This is not a new idea, since nurses have operated child health nursing conferences in Colorado since about 1960 and a number of communities provide in-service training programs for this work. The principal difference between existing programs and this new effort is the emphasis in the new program on expanding the nurse's role in assessing levels of wellness and illness in children.

The educational phase of the program has been supported by the Commonwealth Fund. Initially candidates for the program were required to have a master's degree in either public health nursing or maternal and child health nursing. More recently, the educational phase of the program has been incorporated into the School of Nursing and eligibility has been expanded to include students with baccalaureate degrees who meet the requirements for graduate school. The course is taught by a team consisting of a pediatrician, a pediatric nurse, and a public health nurse.

The course includes both theory and practice in the Medical Center and various community health services. It focuses on three major areas: levels of wellness, management of acute and chronic situations, and emergency care. Since the nurses who receive this training are based in health stations in the community, they become known to the population and they are the ones who are called upon for help when emergencies arise.

Much emphasis in the course is also given to working with the child as a family member and giving parents guidance and counsel in the area of normal growth and development. There is a great deal of focus on the decision-making process. The nurses learn to do physical appraisals or assessments in greater depth than in previous types of training and to decide when the children should be referred to physicians, hospitals or community health centers for treatment.

When the nurses complete the first phase, the four-month educational program, they move, in the second phase, into twenty months of practice in organized community agencies or health stations or into the offices of pediatricians. During this period they actively practice the role for which they have been trained. A particular effort is being made to place them in areas of greatest need -- low income areas, etc. Some of the neighborhood health stations in which they serve are located in converted apartments in low cost housing projects. The nurses do not arrogate treatment responsibilities to themselves. Their responsibilities lie along the lines of advising the mothers whether to seek immediate medical care or to try certain mild management procedures any mother might use when a child is mildly indisposed. Referrals are often within the health care team, since some of the nurses work in community health centers. When referrals have been made outside the team, however -- whether to physicians, hospitals, welfare agencies or other services -- the response has been good and a high level of communication has been maintained. One of the advantages of the program is the exposure these nurses get in the Medical Center and the community health centers to working on a colleague basis in a broadly multidisciplinary team which includes other disciplines in addition to pediatrics, pediatric nursing, and public health nursing.

As of July 1967, there were thirteen nurses in some phase of the program. Some were in the educational phase and others had moved on out into their responsibilities in the Denver agencies. They are on stipends during phase 1, and on salary in phase 2 -- either from Commonwealth funds or agency funds, depending upon where they are placed.

There is no intention to continue this as a special program on a permanent basis. It was designed to provide freedom to explore, create and change, and to demonstrate certain possibilities in the use of nurses. It is hoped that the training can eventually become a regular part of the nursing curriculum at the undergraduate and graduate levels. Vacancies are not being created in existing health services by the program since these trainees are being used to supplement nursing personnel already assigned to neighborhood health centers.

As might be expected, the program has encountered some difficulties. At the start, there was a good deal of opposition from nurse educators and some of the Government agencies toward its more creative and innovative aspects. This was not universally true, however; there were many nurse educators who supported the program's freedom to try -- and, if need be, fail. Those who did oppose the program feared it would lead to fragmentation and development of some sort of separate pediatric nurse practitioner service. It is possible that we may need to think in terms of developing another kind of worker in addition to nursing personnel. To ease the manpower shortage, medical associates might be trained in the medical schools to appraise and treat certain non-complex medical problems under the supervision of pediatricians. Whether this person needs to be a graduate nurse or could go directly into this program from baccalaureate graduation needs to be explored. This however, is not the intent of the present program which has a clear emphasis on better use of nurse-power.

A sore point which has sprung primarily from semantic misunderstanding has been the negative reaction to any use of the work "diagnosis". Physicians often resent the idea of any non-physician making a diagnosis. The program therefore uses the term "physical appraisal" or "physical assessment" because this is easier and less time consuming than arguing about an unimportant semantic question. What is actually being taught is not too different from what has been taught for some time in preparation for public health nursing practice.

The shortness of the training period has some disadvantages. There is no time to offer the nurses any preparation for clinical research, which would be extremely useful to them in community health services. In the regular master's degree program, which encompasses an entire calendar year rather than one semester, there are three educational strands: the clinical strand in which the nurse learns advanced clinical nursing core content, the functional strand in which she emphasizes teaching or supervision or whatever she is interested in, and the research strand in which she is introduced to methodology. In addition, she takes six hours in a minor field. The special training program is, by necessity, entirely clinical in orientation. However, it is not meant to displace or compete with the advanced degree programs; it serves a different function -- to bring the latent skills of trained professional nurses quickly to the surface so that they can be used to meet the crucial needs in child health care.

Although acceptance of the program has in general been good, integration or reintegration of the nurses into community health service programs has proved difficult in some agencies. Many of the nurses who have received the special training came from community health programs. They go back prepared for a different role and sometimes find the agencies unable to adjust to a new pattern of service even though the agencies themselves have encouraged development of this new type of training. Members of multidisciplinary teams are often bound both by the traditions of their own disciplines and those of the agencies.

Specific efforts are being made to evaluate the program as it goes along. This is being done by the Behavioral Science Institute of the University of Colorado under a grant from the Public Health

Service. It is progressing along three avenues: patient acceptance, competency of the nurses, and integration of the nurses into community programs.

Thus far, the response of patients has been excellent both in the health stations and in the pediatricians' offices. Physicians and clinical specialists who have supervised the nurses also have high praise for their competence in their newly expanded role. These supervisors are being questioned specifically about the appropriateness of the referrals, and their increased contributions to the health care team. The evaluative comments of the nurses themselves indicate a high level of satisfaction with the training program. Those who have returned to child health nursing conferences report that they feel more confident about the judgments they make and the recommendations they make to the parents. They have also commented on the better level of follow-through shown by the mothers when they sense that the nurses know what they are talking about and are confident about what they are doing and what they are advising the mothers to do.

One of the great satisfactions of this work, Dr. Ford concluded, is the opportunity to know and work with families in actual clinical nursing. The trainees like the fact that they are not hampered by a lot of non-nursing duties. They have no desire to be assistant physicians; they want to be good professional nurses. They feel they are making a significant contribution, and they like the sense of closeness to the patient that this brings.

Several nurse participants expressed strong opposition to the basic concept of the Denver program. Others felt it might help to meet some very real needs.

Some felt that it is a mistake to divert young people from graduate training leading to a master's degree. This experimental training program, they said, takes two years out of a nurse's life but offers little beyond the preventive, community, public health and family guidance aspects of the curriculum required by all accredited baccalaureate schools of nursing.

Other participants felt that this was true only in theory; that many baccalaureate programs as now constituted do not provide adequate preparation in the special skills emphasized in the Denver program. If and when the schools incorporate more of this type of training into their curricula and health agencies establish more adequate inservice training programs, such special programs will not be needed. In the meantime, better training from whatever source gives the nurses more assurance and the parents more confidence. The nurses are able to participate more effectively in decision-making processes so that patients get into the health care system more easily and at an earlier stage.

When he first heard about the Denver project, a physician said, he had some very negative feelings about it. It sounded a little as if the result would be to make nurses into second class physicians. After visiting the project and sitting in on a well newborn visit conducted by a nurse, he came away thinking how much better care, and how much more time and personal attention the mother and child received than patients receive in the offices of most rushed, harried physicians. The important distinction that needs to be understood is that what these nurses are taught is primarily differential diagnosis between normal and abnormal conditions. Having made this judgment, they then refer abnormal conditions to physicians for appropriate treatment. This is a judgment that nurses with previous background and experience and this additional special training can be fully qualified to make.

Behavioral Science Aspects of Health Training

Behavior is one of the few tools people have to let physicians know they have problems. Behavior is, in a sense, the focal point of all chemical, physiological, genetic, social and cultural influences. The knowledge of behavior is therefore an important part of the medical armamentarium of the physician, just as relevant to the understanding of disease processes and the diagnosis and treatment of illness as is an understanding of physiological functions and anatomical relationships. The contribution of behavioral observations as aids to diagnosis has, until recently, been grossly neglected. Diagnosis in neurological disease, for example, may depend primarily on behavior. In more subtle diseases, the behavioral components may be harder to recognize, but it is quite possible that there are behavioral components to all diseases.

It is therefore extraordinarily important that medical students receive training in the behavioral sciences. It follows that behavioral scientists and members of other disciplines not traditionally incorporated into medical school faculties and health care teams should be drawn into a much closer working relationship with medicine.

In most schools of medicine and nursing, the behavioral scientist is underrepresented in teaching. Members of departments of psychology, sociology and anthropology are often asked to address classes, but on a consultant basis only. There is a great deal of basic scientific knowledge relevant to the work of the future physician or nurse which the medical professional is not qualified to teach; for example, in the areas of learning and cognitive development. If these are to be incorporated effectively into the medical or nursing school curriculum, the behavioral scientist should be involved in designing the curriculum and in teaching. His ongoing collaborative role is equally important in the development of health care services and in research.

It is perhaps a misnomer to refer to "the behavioral scientist" or to "behavioral science" as if each were a single clearly defined entity. This is comparable to lumping surgeons, pediatricians, psychiatrists and other medical specialists together under the single term "physician". The confusion over what behavioral scientists are and do is undoubtedly one factor which has retarded close interdisciplinary collaboration. For most people the term "behavioral scientist" means someone involved in psychology, sociology or anthropology. In actual fact, behavioral scientists also include behavioral biologists, behavioral geneticists, animal behaviorists, and numerous others, and all have much to contribute to training for optimal health care.

The interdisciplinary learning process is very much a two-way affair. The medical and nursing professions and the behavioral sciences have a great deal to learn from each other not only in relation to specific facts and skills, but in the way they approach problems. Behavioral scientists are taught not to believe anything or make any decisions until all the data are in. Members of the medical professions must function on a much more immediate basis, often making decisions on the basis of incomplete information. At the same time, behavioral scientists may draw heavily on their perceptions of feeling and its meanings, while the physician is skilled in observation of empirical phenomena. Working together, staff members of different disciplines begin to move off center from their basic disciplines toward each other. They learn each other's language quickly, but they also discover new things about the problem at hand from the fact that they ask different kinds of questions in different ways, and this carries over in the way they teach their students.

It is entirely possible that the curriculum approach of the medical schools needs to be reversed. It has traditionally started with the test tube and the basic sciences and worked from there to the organs and then to the human being. Consideration of the patient in his family setting and in society has frequently been left out entirely. The behavioral sciences should be brought into the curriculum at an early stage and should bear the same relationship to medicine that other basic sciences like chemistry, anatomy, and physiology do. Psychology, sociology, anthropology, for example, should be incorporated into the education of medical students to form a base of knowledge from which, as physicians, they can make necessary clinical applications in the delivery of health care.

This is what is being attempted at one of the country's newest medical schools, Pennsylvania State at Hershey, Pennsylvania. Dr. Evan Pattishall, Chairman of the school's Department of Behavioral Science, who is both a Ph.D. psychologist and an M.D., said that his department has been set up as a basic science department on the same level as anatomy, physiology, biochemistry, etc. Its major function is to amalgamate and synthesize what various disciplines know about behavior and provide medical students with a basic understanding of human behavior. The university is committed to teaching behavioral science during all four years of the medical curriculum, not just to providing a one year crash course. Beginning with the first year, the student will have opportunities to learn and practice research methodological skills and participate in applied field experiences in community health programs. Thus the school is attempting to recognize behavioral science as one of the sciences basic to medicine, to integrate behavioral science knowledge into the total medical approach, and to develop in the students throughout the four years a sense of responsibility for developing creative and divergent approaches to the solution of medical problems.

The emphasis on behavioral science must not, however, be allowed to become a fetish. If we try to move too far too quickly toward interdigitation of many disciplines, the result could be mutual disillusionment and rejection among the disciplines. No medical school can embrace all the knowledge of all disciplines and maintain uniformly high quality of training. If we try to make every medical student straddle two disciplines, he may end up with both feet planted firmly in midair. We must remind ourselves repeatedly that we are training a physician, not a miniature psychologist or sociologist.

We may, however, also need to develop a new breed of scientist who is truly interdisciplinary in orientation, fully qualified in both medicine and the behavioral sciences. Several schools (Duke, Chicago, Albert Einstein, Western Reserve and others) now have an arrangement in which students can take two years of medical school and then work toward a combined M.D.-Ph.D. degree. Thus far, only a few people with such training have had time to reach the top professionally. Because the concept is so new, it has yet to gain the full acceptance in the academic and research community and at the service level which will allow it to make its maximum contribution.

Training Social Workers for Participation in Health Care

Social workers are being called upon more and more frequently to give planning and policy guidance and to participate in the actual organization of health care and other community services. The impact of these new demands is already beginning to be felt in social work education and will inevitably have an enormous effect in the decades ahead. The problem is not only one of numbers, although social work suffers from manpower shortages like every other one of the helping professions. It is estimated that there are 12 to 15 thousand vacancies for qualified social workers in any given year.

However, simply training more social workers is not an adequate solution. Social work is taking on new identities, and the kinds of skills social workers need are multiplying. This means that the social work curriculum needs not simply to be revised or expanded but completely rethought.

Social work started out as a reform movement. Then, for a good many years, it veered heavily toward the psychotherapeutic approach to the solution of the problems of individuals. More recently, the role of social work has been seen as a blend of several principal functions: (1) engaging in social research; (2) developing machinery for social action and legislation; (3) developing methods of organizing and delivering services; and (4) helping individuals overcome their problems and achieve their potential.

It is difficult to measure the success or failure of social work. Medical intervention in a problem can be considered successful if the progress of disease is arrested or the illness is cured. Sometimes the outcomes of social intervention can be evaluated in a similar fashion; for example, when a child is placed adoptively in a good home and makes a happy adjustment. But preventive social intervention is more difficult to measure; if some social catastrophe doesn't happen, it is not always possible to say whether the intervention was responsible or whether it simply was not going to happen anyhow.

That social work has had many failures cannot be denied. One of its greatest failures is evident in the fact that many of the systems it has produced have not fully achieved the desired results. Unemployment compensation does not provide an adequate economic underpinning. Social insurance provisions are so limited that 30 per cent of the aged who receive such insurance also have to have public assistance. The public assistance system itself is a poverty system which does not provide enough money to enable people to feed their children properly. Minimum wage scale bases are set at starvation levels.

Yet there have also been many advances in the health and welfare of children and families which are directly attributable to the imagination and effort of the social work profession. This long history of planning and implementing social change gives social work a crucial role to play in making optimal health care available to every citizen. This is an extremely important role, but it has its drawbacks. The more social workers are called upon to be involved in community organization, the skimpier the services to individuals will become unless social welfare manpower can be enormously increased. Already far too many untrained workers are being used without adequate supervision. This does not reflect a lack of standards but the fact that trained workers are not available, and the realistic fact is that there is no possible way to provide enough fully trained social workers to meet the manpower needs.

This has a number of implications. One is that training must reach back into the undergraduate level so that large numbers of people can be trained for specific jobs which require specific but limited social work skills. For example, much of the special education needed for work in day care centers, institutions, and services for physically or mentally handicapped children can be provided at the undergraduate level. Effective use of such personnel is, of course, always dependent on the availability of fully trained supervisory personnel.

The second implication is that even for those who plan to become fully trained social workers, training must start at the undergraduate level if it is to encompass the broader range of skills social workers now need to master. Already social work training draws upon knowledge from many disciplines--psychoanalysis, behavioral psychology, the social sciences, administration, research methodology. These are combined into a product which is, in a sense, unique to social work. Social work is one of few disciplines to provide within its curriculum training in the use of group dynamics as a means of producing behavioral and social change.

There is currently considerable discussion within the schools of social work about the appropriate focus of training. With so much to learn, should the student be trained solely in one method, such as casework or community organization, so that his time can be devoted to deep penetration of this particular core of knowledge? Or should he be given a more limited core of knowledge and brief experience with a variety of techniques? Is it better for him to emerge with a beginning level of competence in a specific area of specialization or basic general knowledge of several areas? There are valid arguments on both sides of the question. In general there is a trend away from rigid specialization as a medical social worker, child welfare worker, etc.; and the schools are beginning to give more emphasis to training social workers for consultative functions, particularly in administrative areas such as the organization of service.

Training and Licensing Other Members of the Health Care Team

Responsibility for developing training for non-physician personnel for optimal health care rests primarily with the universities, participants said. Because so many of the central problems of family health care cluster around child bearing and rearing, most participants seemed to agree that the obstetrics and gynecology departments and the pediatric departments are logical focal points within the university to stimulate development of more adequate training programs which should ultimately involve colleges, universities, schools of nursing, schools of allied health sciences, schools of public health, medical schools, hospitals, and other health care centers. The two year junior and community colleges should be more fully exploited to provide training programs for non-physician health personnel. These programs might lead to "medical associate" degrees. The complete training for particular fields of specialization should also include six to twelve months additional training in the appropriate departments and six months internships working with medical residents so that their future association in the community will be more efficient.

Efforts are needed to overcome the present confusion and competition surrounding questions of who should provide training for which types of health personnel. There tends to be a proliferation of training programs which are inadequately related to each other, to the total medical care system, or to community needs. This is due in part to the lack of commitment to the concept of comprehensive family health care. The universities need to assume greater responsibility for bringing about necessary changes in patterns of care such as wider use of medical teams. The only way this can be achieved is by instilling this concept during the medical school years. The hospitals are also somewhat at fault in perpetuating the "spot need" approach to training. Finding they can meet their own immediate needs for personnel speedily trained for specific tasks like technical assistance in surgery, they fail to look ahead toward long-range, community-wide needs.

Joint planning is needed involving not only medical educators but clinicians and practitioners who actually provide health care, program administrators, and members of related disciplines. Anthropologists and sociologists should, for example, be involved in program planning and the training of all personnel who need to know how to assess what is going on in families.

As the definition of optimal health care becomes broader and more comprehensive health care programs develop, the number of different types of non-physician personnel that are needed will continue to increase. For example, growing awareness of the great importance of the early years of life has generated much more emphasis on day care, group care, and parent and child centers designed particularly to reach children at high risk.

But we do not have personnel with the know-how to take care of these babies. So here is one clearcut need. We need to train a group of people of a kind that does not now exist in this country. They do exist elsewhere--in Greece and in the Soviet Union, for example, in the identity of "infant nurses". These are people who are not necessarily trained nurses in the traditional sense but who are trained to know how to take care of babies and also to translate their knowledge into education of the parents. In this country various groups are in process of planning the mechanisms of the proposed programs. The great unmet need is to define what should go into the training of the people who are to staff them.

It is evident that the type of training child care personnel receive has an enormous effect on the well-being of the children under their care. Studies of institutionalized children have shown the importance of personalized care as opposed to the assembly line approach where, for example, one staff member undresses the children, another bathes them, another dries them off, and still another dresses them in clothing selected more or less at random from a pile of institutional garments.

Recently a group of Mongoloid children in a State hospital was studied. These children were institutionalized at the age of three or four months and are now about eight years old. They have a mental age of about two to three years, a crucial age for learning. It is the period in which the use of language begins to get set, and it is when children develop their patterns of interaction.

In comparing these children with Mongoloids raised in their own homes, the investigators realized that the institutionalized children were decidedly more retarded in their use of language. These children are cared for primarily by technicians who work under the supervision of nurses. Their training has centered mainly on nursing care--keeping the children fed and clean and not letting them swallow small toys. For safety, they were kept in their cribs much of the time, which amounted, essentially, to keeping them in a very impoverished environment.

When the technicians were given special training to work with the children in a language development program, the whole atmosphere of the ward changed almost miraculously. The children have begun to talk. They know each other's names and the names of the people who work with them. Some are learning to read, and IQ's have stopped dropping. The fact that the technicians work with them in groups of five and then interact individually with each child, alone, for fifteen minutes has made an enormous difference.

This is an extreme situation, but it has points of applicability for the training of anyone who is responsible for caring for children over fairly prolonged periods of time. Such personnel need to be taught quite specifically the techniques of interacting with children in ways which will promote their response. It isn't enough to give some training in normal child development. Staff members need to be taught to carry this over into practice in terms of interacting with the child in ways that will meet his needs.

As programs expand, it will be necessary to develop additional clearly defined disciplines which do not now exist. Participants from departments of obstetrics and gynecology suggested that training be developed for non-physician personnel whose duties would be to obtain selected historical data, conduct prenatal examinations, counsel patients, follow women in labor, and in special instances, conduct the delivery process. The exact education and duties of such personnel would vary markedly to meet local and regional manpower needs. Because these people would serve as direct assistants to physicians, their training would be physician-directed and controlled. Eventually, degree programs might be developed. Although some candidates might be drawn from disciplines like nursing and social work, care should be taken not to divert undue numbers of trainees from disciplines alrealy beset by manpower shortages of their own.

Clear identities for each of the new types of non-physician health personnel should be established. This is important both for their self-image and for the respect in which they are held in the medical system and the community at large. It is also necessary from the practical standpoint of the need for classification in personnel and accounting records.

Many innovative programs in the training of allied health personnel are already in operation in this country. For example, experimentation and research in the organization of professional and technical nursing duties on a team basis was initiated by the Division of Nursing Education of Teachers College, Columbia University, in 1949. The purpose of this program, according to Dr. Eleanor Lambertsen, Director of the Division, was to discover how hospital nursing services could be organized to provide the most effective patient-centered nursing care.

The emphasis on the team nursing concept grew out of concern over fragmentation of care; the decrease in the number of registered nurses in relation to the need; the increasing proportion of orderlies, practical nurses, nurses aides and other auxiliary personnel being used to provide nursing care of patients in hospitals; and the employment of inadequately prepared personnel without adequate supervision. Under the team system of organization, the professional practitioner or team leader is responsible for evaluating each case and assigning appropriate personnel, taking into account the level of knowledge, judgment and skill required for each aspect of safe and effective nursing care.

For example, sensitive procedures such as administration of an enema to a patient with malignancy of the lower bowel would always be assigned to a registered nurse. The professional practitioner or team leader carries direct personal responsibility for complex cases.

Continuous inservice training programs were a built-in part of the experiment. As new needs were recognized, training programs to meet these needs were developed. For example, in one unit where patients with pathology of the head and neck are treated, 50 percent of the patients had had gastroectomies or tracheotomies, but the unit had only two RNs. The project decided that all personnel including housekeepers should be trained to suction, since this can make the difference between life and death for these patients. The project was able to train these people to a very high level of skill.

The program of service and training developed at Columbia has been highly successful, Dr. Lambertsen said. Currently more than 200 similar programs offer training at the technical level of nursing practice and lead to the Associate of Arts degree in junior and community colleges. Both practical and registered nurses may now qualify for career advancement and admission to advanced degree programs through proficiency examinations developed by the State of New York.

In all five conferences, every mention of the use of auxiliary personnel in health care services brought immediate expressions of caution about the need to maintain high quality care through proper standards and supervision. Lack of adequate training and supervision can have disastrous effects on the patients. A study reported by Howard Rusk showed that 50 percent of the patients admitted to rehabilitation centers came in with damage which was due to the lack of supervised, high quality services in general hospitals. What personnel is assigned to a case should depend on its complexity. Even a simple process like an enema can be hazardous if improperly handled. A report in the Journal of the American Medical Association showed increased incidence of bowel rupture when responsibility for enemas was assigned indiscriminately to orderlies without reference to the condition of the patient.

On the other hand, numerous important specialties have been developed which result in better service to the patients because better use can be made of the time of professional personnel. The use of food service managers, for example, makes it possible for the time of dietitians and nutritionists to be devoted to the therapeutic aspects of food service. In laboratories, there used to be only pathologists and laboratory technicians. Now many subspecialties provide greater accuracy and efficiency.

Adequate licensing protections and standards of practice for allied health personnel should be built into every program of health care from the very beginning of planning. In any new field, this is a complex and time-consuming procedure, but one too crucial to be eliminated. Care needs to be taken also that licensure laws are not unwisely restrictive and so rigid that they quickly become obsolete.

The fact that laws vary widely from State to State makes the problem more difficult. It was suggested that a study should be made of the effectiveness of present laws surrounding the use of paramedical personnel as a basis for development of a model law. The study should include not only the laws themselves but case decisions that have been rendered. What makes this a difficult assignment is the lack of a clear definition of the kind of care that needs to be provided. After experimental programs in a particular State have shown what kind of care is desirable and what kinds of personnel are needed, the problem becomes how similar innovative programs can be introduced in other States where laws may be different.

Currently, the dental profession is attempting to develop more uniform standards for dental assistants. The use of auxiliary dental personnel has expanded greatly during the past decade. The American Dental Association has now asked the State societies to examine their Dental Practices Acts to see what the strengths and the problems are and how better standards can be worked into them.

One problem often encountered in efforts to establish uniform licensing and standards in any field is that the States guard their legislative prerogatives very closely and resist the idea of mandatory licensing through State laws on a nationwide basis. It is often difficult to convince State legislatures of the need for legislative changes. They also tend to resist extending licensing coverage to new groups, since so many separate licensing boards already exist in some States.

Making Training Relevant

There are many dimensions to the problem of communicating scientific knowledge to students. Perhaps the most important is the question of relevance. In all professional schools the basic curricula have become seriously overloaded with both relevant and irrelevant material. There has been an enormous expansion of knowledge in the last ten to fifteen years, and the schools have tacked all this onto their curricula by an appendage system without thinking through whether it really relates to being a physician or a nurse or a social worker or a member of some other particular discipline. We have become so concerned with the minutiae of science and of professional techniques that we have literally exceeded the limits of over-deposit and over-teach. We think it is all so important and so exciting that we must cram it all into the student, else how can he call himself a professional?

But there is too much; it simply isn't possible to get it all into the curriculum, and there is no way that the student can process and make use of all this information. It is foolish to over-teach in a way that ignores how learning and retention occurs in adults. We know that retention of nonsense syllables is lower than retention of meaningful material, and if we throw a lot of undifferentiated information at the student, he is going to "hear it" as nonsense rather than as relevant material he will need to know in his profession. There is a danger of killing the student's interest and making him antagnostic toward the core content that he really does need to absorb.

It is easy to delude ourselves into thinking that students can become professional by getting a smattering of this and a smattering of that. In any given field we must ask exactly what parts of each basic science are directly relevant to what the student will need to know when he enters practice. What parts of the vast bodies of knowledge about anatomy or biochemistry does a physician need to know? What parts of anthropology and developmental psychology will supply the perspectives he needs? What does he need to know about community organization? Which physiological facts and sociological concepts are essential knowledge for every social worker? What does he need to know about various research methodologies? About the genetic and environmental components of mental retardation?

If students are to understand the full range of possible causes of the failure of children to thrive and develop normally, they should be taught the information they need from each discipline by those best qualified to teach it. A physician who is not also a biochemist cannot be expected to know what the most important biochemical facts are that health care personnel need to know, nor can he be expected to be thoroughly familiar with the most recent research findings. A physiologically oriented physician cannot be expected to know what medical and nursing students need to know about developmental psychology. Cross-discipline teaching should not be done on a hit-and-run guest lecturer basis but should involve continuing faculty appointments.

The sole responsibility for the selection of curriculum materials should not, however, rest with representatives of individual disciplines. Training must continually be reevaluated from a broad perspective which considers: (1) the latest and most reliable research findings; (2) the structure of the health care system; and (3) the realities of practice.

Relating Training to Current Medical and Behavioral Research Findings

In many areas affecting the optimal health of children, policies and even legislation are based on outmoded data or data that were inappropriate to start with. Similarly, much of the training of health care personnel is based on misinformation rather than recent findings of soundly based research.

For example, many early studies of child development used institutionalized children as subjects--yet the findings are still being cited as if they applied to all children. Because many children in the absymally poor institutions of the era failed to thrive, strong prejudices against any form of institutionalization, particularly of very young children, arose. These prejudices still permeate health and welfare policy. Some states are severely handicapped in developing creative child care programs by legislation which prohibits group care of any form for children under the age of two, or sets arbitrary limits on the number of children who can be placed with a licensed foster mother.

Many recent carefully controlled studies show that children in the United States and other countries often develop better both physically and psychologically in well designed group care programs than under the excessively deprived conditions which may be the only alternative. But these findings are often ignored, in part because of a deeply entrenched emotional belief that every child is better off in his own home, under the care of his own mother, regardless of the conditions of the home or the quality of mothering he receives. Or that a foster home which he shares with one or two other children is better than a group care situation, even if the home and the foster mother can offer few qualifications which will assure the healthy development of the child.

Changes in social policy have been evident in recent years in Head Start and similar programs, but for such innovations to have a deep and lasting effect on the provision of optimal health care, a great many basic changes need to be made in the training of health care personnel. For one thing, students must be taught to understand the difference between correlation and causation. When two phenomena appear to be related, it is easy to fall into the trap of believing that one is the cause of the other, whereas the relationship may actually be a function of a great many other factors. A malnourished child, for example, may have a rejecting mother, and it is tempting to assume a cause and effect relationship: the child is malnourished because his mother hates him and doesn't feed him properly. But the actual cause of his malnutrition may be a physiological anomaly of some sort. Or it may be that the mother feeds him poorly not because of rejection, indifference, or lack of nutritional knowledge but because the family income is insufficient to provide nourishing food.

Students should, whenever possible, have the opportunity to study the basic facts of different disciplines within broad cultural contexts. An upper middle class student taught by upper middle class educators in a teaching hospital which serves a middle class clientele is apt to assume the mores of his own culture are a God-given way of life and that any deviation from them should be corrected. He needs exposure to the kinship and childrearing patterns of other cultures. He needs a broad enough base of such learning to be able to look dispassionately at his own and other cultures and separate out what are simply cultural differences and what are basic problems which adversely affect child health. It is in these contexts that the anthropologist and sociologist have particularly significant contributions to make in the training of health care personnel.

Relating Training to the Health Care System

One of the principal problems in designing training for health care services is that medical educators have not looked closely enough at the relationship of the training they give to the rest of the medical care system. Economists look at the total economic system in terms of interrelationships among consumers (householders, etc), entrepreneurs (manufacturers, salesmen, retailers, etc.), forces (taxes, banks, etc.) as they are affected by population changes, new technologies, etc.

In the medical system we have consumers (families, children, etc.), practitioners (physicians, nurses, etc.), services (hospitals, clinics, etc.), and educators. We have not only failed to look at the interrelationships among these categories, but we have not looked carefully enough at the effects of such factors as the information explosion; changing patterns of medical practice, such as group practice; prepaid insurance, Medicare and Medicaid; minimum wage laws, and a host of other things.

How are all the pieces of the system going to fit together in the future? For example, the general practitioner seems to be disappearing from our society, and the number of physicians going into private pediatric practice is diminishing. Who is actually going to be taking care of the 76 million children there will be by 1980? And where do they fit into the total medical system? What are the effective and ineffective elements of the training and medical care systems we now have? What additional kinds of training need to be offered in the systems we now have and will have in the years ahead? These are some of the questions we need to analyze.

In evaluating a system, it is necessary to look at two things:

- effectiveness--Does it solve the problem it is supposed to solve? Has there been a social gain? A positive or negative effect from the delivery of the service?

- efficiency--Does it solve the problem in the best way?

In the health care system, one would determine efficiency by looking at the ultimate effect on the patient. A health problem occurs.

It is perceived at some level, by the patient or by some professional individual or group who may have become conscious of the problem through some source like statistics on an upswing in infant mortality. The problem is brought to the attention of some professional individual or group in a position to do something about it, and thus enters the health care system.

Then several things may happen. The professional may listen but not really grasp the problem, and may therefore do nothing. This is zero effectiveness. Or he may recognize the problem, but still do nothing for one reason or another. Again zero effectiveness. Or he may grasp the problem and make a diagnosis. If the diagnosis is wrong, and effectiveness is still zero. If it is right, there is a gain in effectiveness, and this may be true whether the diagnosis indicates that no disease is present or that medical intervention is needed. If the diagnosis indicated no disease is present, and the patient is reassured, there is a gain in effectiveness. If, however, he goes away unconvinced, there has been poor effectiveness. If the diagnosis indicates the presence of a problem that needs correction, and appropriate treatment is undertaken, there is a gain in effectiveness--if the therapy proves to be the correct one. If the wrong therapy is used, there can again be a zero gain in effectiveness. If the patient recuperates, the system has been effective. If he expires, it may mean that the system has been ineffective, or it may mean that his death was the natural course of disease which could not be forestalled but that the system itself functioned as effectively as possible under the given circumstances.

In designing training for health care services, it is necessary to look at each of these steps in the effectiveness of the medical care system to see whether it has been handled efficiently. Has the patient received the care he needed, or has he been batted about from one service or one subspecialty to another? Where were the bottlenecks, in organizational structure or in failure to perform certain functions in the best way? Exactly what types of professional and non-professional functions are involved in giving him the best possible care? What types of personnel are needed to perform these functions? Only after these questions are answered can we determine what kinds of training are needed.

Relating Training to the Realities of Practice

Having emphasized both that patterns of health care must change if the needs of our expanded populations are to be met, and that they are, in fact, changing in the direction of group practice and community health programs, participants in the five conferences related these facts directly to the problems of training. Medical and nursing education, they said, is still lagging behind the social changes that are occurring. It continues to be oriented toward private practice based on a one-to-one relationship of physician and patient and traditional types of hospital care. Students emerge from training with a good base of scientific knowledge and a good command of medical and nursing techniques, but they are not at all prepared to cope with the pressures and special demands of service to large groups of people, many of whom are from backgrounds so different that it is even difficult for the patients and the medical personnel to communicate with each other.

An additional complicating factor is that the public welfare agencies often carry major responsibility for the health care of their clients, yet social workers have a limited background in understanding medical problems, and coordination among the health and welfare agencies of the community is often so poor that efficient referral is impossible. Furthermore, public health departments are often woefully inadequate to meet the demands placed upon them.

This brings the cycle back to the medical schools, for a principal reason that public health departments are inadequate is the lack of commitment to training medical personnel for community health functions. This is not only a matter of curriculum content; it is also a matter of selling students sufficiently on the idea that the challenges of community health careers can equal the status and economic rewards they expect to find in private practice.

A second key weakness in training personnel for health care services is the separateness of training. Physicians are trained in medical schools; nurses in schools of nursing; sociologists, anthropologists, psychologists and other potential team members in their individual university departments. There is virtually no contact between the students of different disciplines. Even in the case of medical students and nurses, who are at least brought together in the hospital setting during training, true mutuality of training is lacking. Nurses come into the hospitals with a principal orientation toward patient care, while interns and residents are often heavily oriented toward biological pathology.

It was strongly suggested that this disciplinary fragmentation of training should be reversed, and that the actual education of students in the various disciplines should take place in the same classes whenever this is feasible. This is not to say that social work students should be required to undergo full medical training, or that medical students should be required to become experts in casework techniques, psychological testing, or anthropological research. But there is a basic core of knowledge of human physiology, behavior and social structure which is needed by all members of health care teams. There are many advantages to this knowledge being presented jointly to students. First, the students will learn to know and trust members of other disciplines so that they will not be overwhelmed by the strangeness of trying to understand each other for the first time in the stressful environment of actual practice.

Second, because of their different orientations, students will learn from each other through the kinds of questions they ask. They will begin to develop a joint design, a set of ideas and concepts about ways of looking at problems holistically. They will become aware early in training that there are certain problems no single discipline can meet alone--problems like mental retardation, cerebral palsy, educational handicapping. They will develop a broader view of the overall needs of the child and his family and recognize that there are some needs that they, as individual practitioners, do not have the skills to meet.

The idea of joint training of the various disciplines is unfortunately "easier said than done", particularly since medical schools are often physically separated from other schools of the university. This not only precludes joint classes in many cases but means that neither faculty nor students have opportunity to get acquainted informally with members of other disciplines over a cup of coffee in the campus hangout.

The deep concern of a group of medical students that the traditional training they were receiving was not equipping them adequately to meet the problems they would face when they enter practice led, in 1965, to formation of a multidisciplinary group known as the Student Health Organization. Dr. Michael McGarvey, who had been one of the organizers of this group, reported on its purposes and activities. From an initial summer project in California in 1965, the community-oriented organization spread to cities throughout the country, including Boston, Chicago, Cleveland, and New York.

The movement started, Dr. McGarvey said, because the students suddenly realized that in four short years they would be the people responsible for helping solve the overwhelming socio-medical problems of the major urban and rural areas. The students decided to go directly into the community to see what health services people receive and what services they need but do not receive. They attempted to learn about the problems of medically disadvantaged populations and about the forces which perpetuate sub-optimal health conditions.

Inviting nursing, dental, psychology, social work and other health science students to join them, the medical students arranged for speakers to talk with them about controversial problems like poverty, abortion, etc. One of the speakers challenged them. You are learning a lot about these problems, he said, but that is a hollow effort unless you do something about them. What are you going to do?

The students responded by setting up the multidisciplinary organization to see what they could do, with the skills they possessed at that stage of their education.

They were disturbed to realize that they had never really learned what nurses are capable of doing, what dentists are capable of doing, what social workers are capable of doing. They tried to involve people from many different disciplines in the initial planning and formulation so that they could find out what each discipline knew and could do, and combine their efforts in a way that would enable each discipline to contribute more effectively.

The group developed several screening projects, and quickly discovered that the people of the community are hostile toward screening projects--unless they lead to something. That is, unless they lead to services which can really help them solve their problems. Because of their student status, Dr. McGarvey said, members of the group were able to move among agencies and pull together people who hadn't spoken to each other for years, if ever. They brought them together to talk about specific problems such as how to meet the needs of people whom screening had identified as needing glasses or hearing aids or dental work. From these encounters came actual services to these people.

In the summer of 1965 the program was extended into the San Joaquin Valley so that the students could get first hand knowledge of the problems of the rural and migrant poor. This involved a considerable cultural shock for the students. As a result of their reports to various established agencies, the group was invited by the Office of Economic Opportunity to develop an expanded program for the summer of 1966. Under the sponsorship of the University of Southern California, the program brought together 90 students of medicine, dentistry, nursing, social work, and dental hygiene from 40 institutions in eleven States. The students worked in the poverty areas of California, both in cooperation with established community agencies and on a sort of free lance community organization basis. The program was an overwhelming success and the preceptors in the various agencies were highly complimentary in their evaluation of the contribution the students had made. There were four times as many agency placements available for 1967 as there were students to fill them.

A major realization on the part of student participants was that the consumers of health services must be involved in the planning of such services to assure their pertinence and their acceptability. It became clear that even the best intentioned professionals were often surprisingly unable to appreciate accurately the problems faced by patients in traditional or experimental health service settings.

Another important concept that has come out of the program is that the student is a tremendous untapped resource for community service. It is just as possible for a student to "learn by doing" in the community as it is for him to learn by doing in the wards of a hospital. At this point the program is trying to identify what kinds of solid contributions students can make at each stage of their training, and how their skills can be used most effectively. One of the most gratifying results has been the carry over of good will and action among the existing agencies of the communities after the students return to school at the end of each summer.

The 1966 summer program culminated in an interdisciplinary conference at Stanford University. Each time the students "provoke" a meeting of this sort the professionals who attend seem impressed and invigorated by the wholesome exchange of ideas stimulated by the students among people who normally wouldn't think of speaking to each other. The program has been extremely helpful in getting cooperative problem-solving efforts under way.

The students themselves return to school enthusiastic about the initiative they have been able to show and the things they have been able to achieve. They are also frustrated by the magnitude of the problems they have found. But from this frustration seems to be growing a new commitment on the part of student professionals to the goal of high quality health care for all who need services.

An objective of these programs is to establish this kind of field experience as a valid elective clerkship as an alternative to more stereotyped forms of training. Students are eager to pare time away from their formal curricula to go into the communities and try to compensate for the defects they recognize in their educational preparation by learning through their participation in community programs.

GUIDELINES FOR FUTURE ACTION

As the five-conference series drew to a close, Chairman Dwain Walcher expressed the gratitude of NICHD and the Offices of the Secretary of HEW and the Surgeon General for the guidance the participants had given. In addition to agency staff, nearly 60 participants had worked together to define some of the basic issues in the development of optimal health care. Some participants had attended all five meetings, and several had attended more than one. The carry-over and continuity this provided was invaluable in uniting the separate conferences into one cohesive but many-faceted examination of the problem. The other participants, each attending one meeting, brought in fresh ideas from many disciplinary and functional viewpoints.

The conference groups were not asked to present formal, specific recommendations. However, guidelines for program development, training, funding and administrative structuring, and research are implicit in their discussions of every topic they touched upon. Most of their suggestions regarding program development and training have been reported in earlier sections.

Many of their comments regarding the need for adequate funding for planning, services and training underscored the importance of Federal support if changes of the necessary scope are to be achieved. Because the specific administrative methods of providing such funding were not a central part of what the conferences were asked to consider, such suggestions were kept to a minimum. Participants did, however, stress the need for funding mechanisms to be flexible enough to break through traditional bounds and permit innovative programming, research, and training across disciplines and across agencies. They also urged that one central grants "window" be established so that applicants for fund support can submit a single application which will automatically be channeled to all appropriate sources.

In regard to research, the participants pointed out that program development must rest on a sound basis of medical, developmental and social research; research into the organization, delivery, and evaluation of services; and research into the educational processes involved in training personnel to provide services.

We have only to look at the enormous decrease increased knowledge has made possible in congenital syphilis, retrolental fibroplasia and other tragically destructive conditions to realize how important both basic and clinical medical research are in fostering optimal health. But the catalogue of unsolved problems like prematurity, cerebral palsy, and placental dysfuntion remains large and challenging.

Research into the organization and delivery of services needs to encompass many specific questions that remain unanswered, such as how many prenatal visits are desirable to assure a normal pregnancy and delivery; what the best physical and administrative structures are to assure that the health care system itself does not create obstacles to acceptance and use of services; what are the vulnerable ages and the desirable time intervals at which infants and children should be seen for health care to have maximum preventive effect. In the health and welfare fields, we tend to measure effectiveness by whether or not we are comfortable about something we are doing. If so, we assume that doing more of the same thing is a good idea. We tend, for example, to measure the availability and effectiveness and utilization of health care services in terms of physician visits. But the physician visit is a production input, not an output. We do not measure the quality or status of education solely by the number of pupil-teacher contact hours; we measure it by how much the child has learned and how he has developed. We must find comparable ways of measuring the effectiveness of health care services.

Perhaps what we need do most of all in research is to be sure we are asking the right questions. Basic research, unlinked to immediate hope of application to clinical problems is essential, but research is also needed which grows out of some need. Usually such research springs from one of three types of concern:

- the need to solve technical problems of a discipline, such as the psychologist's interest in problems and processes of maturation, the physician's interest in particular disease processes, or the sociologist's interest in the dynamics of family life

- the need to solve certain community issues and problems, such as the cause, control and prevention of race riots or ways of overcoming the special handicaps faced by poverty level families

- the need to evaluate the usefulness of various program approaches. Evaluation should be built in as an integral part of every health program from the very beginning. Responsibility for evaluation might be carried by the universities rather than by the service programs themselves.

Closely akin to the need for evaluation is the need to make the findings of research and the results of innovative programs broadly and speedily available. There should be increased reporting at the meetings of medical and other professional groups, and there should be rapid publication of summary materials which can provide guidelines in development of additional programs. Maximum use should be made of information already available in the United States and other countries about research, services, training, standards of practice, and previous conferences on related topics.

There is a need for well-coordinated prospective studies. Longitudinal, multigeneration data gathered now can be immensely valuable in solving the health problems of future generations if the studies are properly designed for comparability of data and flexibility which will make it possible to add new lines on inquiry as the studies progress.

Finally, research should be thought out in terms of its contribution to the design of social policy. Someone or some group needs to be responsible for asking questions about health care in a holistic sense. It is here that the interdisciplinary approach has a particularly important contribution to make, as each discipline can complement and supplement the thinking of others.

The primary purpose of the five conferences was not to provide definitive answers but to open channels of thinking and lay the groundwork for Departmental decision-making and program policy development. This purpose the participants fulfilled admirably. As one person put it, the interdisciplinary conference groups established many islands of understanding which now need to be joined together.

As the participants pointed out repeatedly, the changes that are necessary if our health care goals are to be achieved cannot be accomplished through superficial approaches. It is not, they said, a question of putting a little dab of whipped cream on top of something. Solutions must reach deep into underlying problems of economic and social stability as well as into revision of outmoded patterns of service and training. We need to move beyond planning and into action as rapidly as possible. It is essential that we tackle the whole problem as well as its component parts. Under the expanded conceptual, legislative and funding mechanisms that have been developed in recent years, we now have the means to do this. Our goals cannot be instantly achieved, but the investments we make now - of time, of funds, and of creative thinking - will be repaid in the years ahead as increasing numbers of children and their families achieve the optimal level of health which is their right.

APPENDIX

Schedule of Conferences

January 3-4, 1967
February 23-24, 1967
December 14-15, 1967
June 28-29, 1967
August 9-10, 1967

List of Participants

Chairman of Conference Series
Dr. Dwain N. Walcher
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Miss Mildred Arnold
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